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© TIMES NEWSPAPERS LIMITED, 1981
Published by Times Newspapers, 70 Bow 7, 200 Gray's Inn Road, London WC1X 8EZ. England. Typesetting by ComputerGraphics, 37-41, Chancery St., London EC1. Printed and printed by Northampton Mercury Co. Ltd., 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. Registered as a newspaper at the Post Office. ISSN 0307-681X.



HIGHER EDUCATION SUPPLEMENT
200 Gray's Inn Road, London WC1X 8EZ. Telephone 01-837 1234

Selectivity and the UGC

Some very harsh and very silly things have been said about the University Grants Committee in recent weeks. The UGC has already been accused of being a "Quisling" simply on the strength of whispers about its intentions through *The THES* and other conduits of unofficial information. Presumably when the committee's detailed advice is sent to universities later this month it will be compared to Hiroshima or even the holocaust.

This style of criticism is not only dishonest but also distasteful. It says much more in fact about the maturity of those who indulge in it than about the alleged wickedness of the UGC. It is so exaggerated as to be ridiculous, and as a result actually undermines the case it is striving to support. And the comparison with truly terrible events on which it relies must leave a large question mark over the adequacy of the moral imagination of such critics.

But this misplaced venom cannot be dismissed so categorically. It is easy to say, like President Truman, that "if you can't stand the heat, get out of the kitchen," but the chairman of the UGC is not the President of the United States and it has never been customary, and is not now desirable, to conduct academic politics in this childish and hysterical manner. Finally these strident critics should remember a saying by President Truman's predecessor in the White House about the greatest thing to fear being fear itself. Those who talk as if the university system is about to collapse simply encourage the spread of demoralization and the rise of despair when neither of these reactions can really be justified or excused by a calm assessment of the likely future course of university policy.

Yet the UGC must still answer the much more serious and substantial criticism, expressed among others by Professor John Griffith, chairman of the Campaign for Academic Freedom and Democracy, that its present intentions and future actions are undermining fatally the independence of the universities, on which in turn depends true academic freedom. Their argument is that the UGC is an agent of government and so external to the universities, and that it is trying to take decisions about academic priorities which constitutionally are not the committee's business and which it does not have the practical capacity to make in a sufficiently sophisticated form.

Their assumption, presumably, is that any Government-imposed cuts should be passed on mechanically to the universities on a *pro rata* basis and (this part of the argument is less clear) that individual universities should take the tough decisions about priorities required by diminishing resources. This point of view has substantial support right across the spectrum of university

opinion: conservatives have always been concerned about the steady encroachment of the state on the traditional autonomy of the universities, while radicals see such a state and the secure foundation on which to base their fight against the cuts in public expenditure.

The validity of this argument, however, depends on what view is taken of the status of the UGC. Professor Griffith and like-minded critics are formally correct: the UGC is part of government (Dr Edward Parkes, its chairman, has the formal rank of a civil servant at the DES). Yet such a description is not sufficient because it ignores the powerful conventions that actually guide the UGC's relations with the DES on one hand and the universities on the other.

If the operation of the UGC rather than its formal status is the decisive factor, it is probably more accurate to regard the committee as a collective agent of the universities rather than as an oppressive quango.

Those who take a traditional view of the proper relationship between universities and the state should hesitate before criticizing too savagely the present behaviour of the UGC. They should remember that in the real world the active choice is between "rationalization" by Dr Boyson and his supporters civil servants and selectivity by Dr Parkes and his fellow academic members of the UGC. They should also perhaps remember that in a more fundamental sense the subjectivity of the UGC's judgments can be regarded as an important defense of universities' independence. Would they prefer the only buffer between the universities and the state to be a formula of norms and unit costs? In any case the experience of the polytechnics and colleges has shown there is no such thing as a neutral, mechanical distribution of resources (especially when those resources are diminishing).

Those at the radical end of the spectrum should remember that the progressive development of higher education policy depends on the availability of instruments of change. Selectivity is a two-way process, as essential for healthy growth as for debilitating cuts. Politics, Nye Bevan reminded us, is the language of priorities. Surely the UGC could fulfil a useful role. Or do they really believe in the radical instincts of 44 university senators?

In any case this semi-constitutional wrangle tends to confuse the proper issue, which is not whether the UGC has the right to be selective in its treatment of the universities but whether the decisions it takes are soundly based on a proper and fair examination of the available options. Flowers and now Swinnerton Dyer

have shown that all rationalization exercises provoke opposition, regardless of their constitutional validity. In the end it is the message not the messenger that counts.

So two questions remain unanswered. Will the UGC get its selectivity right? And is the committee a sufficiently open and accessible body to make its plans stick? It would be nice to answer both in the affirmative, but it is not easy. Although it is much too early to judge the UGC's strategy, the smoke signals are not good. The suspicion is growing that the selectivity being planned is very much along the lines desired by the civic university-hard science *blot*. It will be interesting to see what room the UGC will be able to make for continuing education and part-time courses. It will also be interesting to see to what extent the committee is prepared to trust its own subjective judgments about the likely sources of future excellence against the apparent objectivity of league table of research grants and other reflections of the status quo.

The second question is even more difficult to answer. All that can really be said is that while selectivity by the UGC is not new, the scale of the contemplated selectivity is unprecedented. So it may well be that a new kind of UGC is required in these changed circumstances. Although reform would have to be in the direction of a more open, more representative, and (sadly perhaps) more bureaucratic body, the dangers of such changes would have to be recognized. To deliver the UGC entirely into the hands of the special interests would undermine its effectiveness in bargaining with Government and possibly also its neutrality between institutions and the state to be a formula of norms and unit costs? In any case the experience of the polytechnics and colleges has shown there is no such thing as a neutral, mechanical distribution of resources (especially when those resources are diminishing).

Probably the only stable solution to all these related problems of priorities and resources will be to devise new institutions that cover the whole field of higher education. Probably only in this wider framework can the delicate issues of neutrality, legitimacy, accountability, and efficiency be reconciled. Much the best plan would be to establish a bi-cameral system of government - an overarching committee which would be able to emulate the rather Olympian quality of the old UGC and be concerned with the broad direction of policy, and committees for each sector in which the play of sectional interests would be allowed greater scope.

A timely warning from the CBI

The Confederation of British Industry should be applauded for its initiative in trying to stem the tide which is beginning to run against the employment of graduates. Sir Raymond Pennock, in his letter to CBI members, rightly points to the damage done to the higher education system by irregular recruitment patterns, especially among the larger companies. There are uncertainties enough in higher education at the moment without giving potential students further reason to question the advisability of joining courses. Industry itself will suffer in the long run if graduates of the highest calibre are in short supply when the recession ends.

But mere encouragement by the CBI will not be enough on its own to cope with this growing problem. With economic recovery slow to materialize, more and more firms are finding themselves left with no choice but to cut back on all levels of recruitment. No matter how sympathetic they are to Sir Raymond's appeal, they will be

unable to comply and a sharp rise in graduate unemployment seems inevitable.

Such a trend has been on the cards for several years and should surprise no one. The graduate jobs market has remained largely insulated from the worst effects of recession for a surprisingly long period but the time was bound to come when the supply would begin to dry up.

This week's conference at Sussex University on alternatives to the traditional forms of employment sought by graduates could provide answers for some. Self-employment, co-operative ventures and other less conventional occupations could be preferable to a further lowering of sights itself, since there is growing unease about over-qualification.

The main point must fall on the Government, however. There can be no argument that extra help is most needed for school leavers, who will

remain in a far worse position than graduates regardless of the extent of this year's slump.

Entirely understandably the Manpower Services Commission's main thrust has been directed towards the urgent and overwhelming problems encountered by underqualified school leavers. Already there are alarmist projections that up to half of this summer's leavers will not find jobs. Clearly the MSC's efforts must be directed to the massive task of training and employment substitution that is that it is not just the underqualified who are being hit by the recession. School leavers of average attainment also face a bleak future. It will be the medium and long term is an overall policy for all new entrants to the labour market, from the sub-SCE to the post PhD.

Finally we have received the long note from Professor Y. J. Sprogue rather than Professor Y. J. Sprogue's contribution. At this time, as he suggests, we reach a somewhat higher analysis than that usually associated with the Motsons. It seems to me that the analysis is undermined by the unreasonable belief in the common powers of Keegan. I was also very sure that the article contained much of his early commentaries on national matches (circa 1968) of belief, do a great deal of the current conceptions of the national team. Overall, however, this is a fine piece which deserves a publication. I would suggest not more than £150.

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Laurie Taylor



"More publication costs should be transferred to author to prevent rising of prices of academic journals" *THES* May 29, 1981.

The Journal for the Publication of Relatively Second-Rate Academic Social Problems.

Dear Dr Sprogue, "The Negotiation of National Life: The Role of Sports Commentators" is an article which you recently submitted to this journal with a view to possible publication. In accordance with our usual practice we have three academic referees to come upon this paper and to make suggestions as to the most appropriate publication.

Professor A writes: "I would like this man off with less than £500, perhaps another tenner on top reproducing his tatty diagrams. I honestly think as though Sprogue completely fluffed. Some of the he's been turning out in recent years has suggested a mind at the edge of the cliff but this latest piece is a pit. For a start he's years out of it. Even leaving aside the inherent clarity of his thesis, namely, that commentators are increasingly responsible for the development of ideas about national character, it simply isn't good enough to rely on such antiquarian sources as Dr McPherson, Raymond Andrews and Eamon Andrews and Barrington. Quite frankly, if an underdog handed in work of this quality I'd seriously have to consider whether to publish. Sprogue has gone home. Make him pay through the nose for one (and no credit)."

Doctor X writes: "What a pleasure it is to read such a perceptive and well piece of work. Sprogue's thesis is unmissable: there can be little doubt that our current conceptions of Welsh, Scottish, Swiss, Hungarian, English national identities are derived primarily from the widely disseminated prejudices of sports commentators. My only slight disagreement with you is over the exact contribution to this by James (Jimmy) Hill, common with some earlier writers in this field, I would place his name somewhat below that of John (Robt) Wilson. But these are minor points. A fine piece which deserves a publication. I would suggest not more than £150."

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The Times Higher Education Supplement

June 19, 1981 No 450 Price 45p

Maths lecturers aged 35 to 45 should go, says UGC report

by Paul Flather

A new report prepared for the University Grants Committee on the future of mathematics recommends that lecturers aged 35 to 45 should be compulsorily retired to deal with the expected drop in students over the next 15 years.

The report, by Professor Douglas Jones, professor of mathematics at Dundee University, and chairman of the UGC mathematical sciences sub-committee, is currently being circulated to universities, colleges, and education bodies for comment.

The report is a study in manpower planning based on a "macroscopic" survey of the expected demand for mathematics lecturers. It discloses that on current demographic trends there will be a 36 per cent fall in mathematically trained students entering universities between 1983 and 1997.

The report predicts that there will be 6,000 to 7,000 engineering students in 1998, down from a peak of 10,000 in 1983; 6,000 physics students, down

from a 9-10,000 peak, and just 2,500 mathematics students, down from a peak of 4,000.

The best way to cope with these demographic changes, is the "compulsory retirement of the members of the 35-45 group," the report says. It assumes current student staff ratios. "Opposition would come from many quarters, but perhaps it is preferable to any scheme which the Government might devise and enforce," it adds. The 34-page report includes 26 tables, but none outlining the age structure of maths lecturers.

The report also calls for a new classification of university maths departments so that they can perform two distinct functions: produce specialist statisticians and computer scientists, and "service" students following other careers.

In future all universities should have "service departments", accorded high status, with high quality staff free to do serious research, but only a few should retain Honours departments and post graduate schools.

Professor Jones, commenting on his report, said: "The point is that natural wastage just does not remove enough people to meet current demographic trends. So you have to look where the big bulge occurs and act on this static age group."

He said it would no longer be possible to sustain all the maths honours departments, so some had to be "regraded". "We must realise further education maths teaching is very important. We must make the community literate as well as numerate."

Professor John Kingman, professor of maths at Oxford University and new SERC chairman, did not want to comment on the report. "It is right that people in our educational system ought not to escape learning maths. That is a bad feature of the present system."

The Cockcroft Committee, set up by the Government in 1978, is also looking into maths teaching and is expected to report this autumn.

*Whither Mathematics, a University Grants Committee report by Professor D. S. Jones (May 1981).

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Universities and the Bomb, 12 and back

Germany pips Britain for astronomy centre

by Robin McKie
Science Correspondent

Britain's bid to host a major new international astronomical centre at the Royal Observatory, Edinburgh, where scientists would coordinate all European research using the proposed Space Telescope project has been narrowly rejected by a European Space Agency panel. Instead, the scientific evaluation panel proposes that the telescope's European Coordinating Facility be sited at the headquarters of the European Southern Observatory in Garching, near Munich, West Germany.

These conclusions are revealed in confidential papers of the space agency, which is to decide on selection next week. The choice will represent a major scientific prize for the chosen institute - which will be responsible for analyzing, storing and disseminating data from the telescope, an orbiting 2.4 metre American-European observatory, scheduled for launch in 1984, which will see 10 times further into the universe than at present.

Four proposals were put forward for the European centre. The others were from the Institute of Space Astrophysics at Frascati, Italy, and a joint bid from the Institute d'Astrophysique at Paris and the Observatoire de Paris. However, the panel concludes that only the German and Edinburgh proposals were fully acceptable and were in the "very good to excellent" categories.

Although the Science and Engineering Research Council's proposal that the centre be sited at the Royal Observatory, Edinburgh, which is closely linked with the Edinburgh University's astronomy department, was considered strong in areas of scientific quality, service experience, hardware, observing facilities and its Starlink computer imaging link with other UK observatories, the panel highlighted several drawbacks.

There were weaknesses in management and archiving in its proposal and the panel further considered the location as "far off from most member countries".

The large differences in high salaries between European scientists who would work there and local staff was a problem. The solution - to have no Edinburgh staff supplied to the coordinating centre - is judged "to be barely workable as it creates an artificial barrier between agency staff and the local staff with a resultant lack of operational flexibility".

The panel then rates the ESO centre, which it describes as "a strong international astronomical centre with an assessment weighting of 76 per cent, the Edinburgh proposal with 62 per cent, Frascati with 59 per cent and Paris with 53 per cent."

Huddersfield gets go-ahead to recruit

Huddersfield Polytechnic was heading back into calmer waters this week after being told by the Council for National Academic Awards to continue with its recruitment of students for the next academic year.

The CNA's committee for institutions decided last week to recommend no action after examining a polytechnic budget appraisal, effectively lifting the threat over the future status and accreditation of the institution.

The budget appraisal was demanded by the CNA after a visiting team found the polytechnic suffering from serious mismanagement and backbiting. The CNA, even threatened to withdraw accreditation summarily.

In a letter to the polytechnic rector, Mr Kenneth Durran, the CNA points out there are still a number of outstanding matters, but that falling resources in past years and bitter internal relations "have not damaged" academic standards on courses.

The CNA is still waiting for details of a review of support staff, near completion, and course reports from external examiners. It also poses four questions on salary levels, recruitment numbers, and the student union budget for 1981-82.

The letter goes on to commend the "serious and competent" way the academic board has approached the task of putting Huddersfield back on keel. The polytechnic now has a breather until the CNA quinquennial visit in March 1982.

Meanwhile both the polytechnic and the local education authority, Kirklees, which this year has given Huddersfield £683,000 from the rates and earmarked another £190,000 for roof repairs, said they were well pleased with the CNAA letter.

Mr John Mernagh, chairman of both the governors and the education committee, said: "At the end of the day we have come through. We can now get the thing back on an even keel. I think I can honestly say I have played a big part in all this."

A key factor, he said, was the tighter financial control exerted by Kirklees over staffing plans, overtime, meeting the £73,000 catering deficit, and all manual and administrative work.



Eddy Caswell, a fine art student at Middlesex Polytechnic, in front of his 20x15 ft mural depicting carnival life which he produced as a "memory provoking" gift for geriatric patients at Colindale Hospital. Eddy worked for five months in acrylic paint on the white plaster wall from cartoons he had done in the polytechnic.

Universities hold their breath for news of next year's cuts

by Ngaio Creguer

The University Grants Committee made its final decisions this week on where the cuts should fall but universities will not be told for several days.

The sheer production difficulties of preparing and checking 45 different letters which will advise universities which departments to close and tell them how many students they should admit has put back the timetable yet again. Originally they had hoped that after this week's two day meeting they could despatch the letters on June 19. Now all they will say is "before the end of the month."

Meanwhile, Manchester University has jumped the gun and in advance of its letter asked faculties to plan for an initial three per cent cut in spending. A confidential planning paper says that this October's target intake should be reduced by 100 students and this can be done by not using the clearing process. It also means that although most places have been conditionally offered and accepted students who fail to get exactly the right examination grades can be refused admission.

The paper says that "... it is safe to assume that the university of Manches-

ter will not escape and that the reduction in our income will be serious, unprecedented and sustained."

In the House of Commons this week Mr Mark Carlisle, secretary of state for education, refused to give an assurance on university funding until he had seen what the UGC was recommending. Mr Philip Whitehead MP (Derby, North) wanted an assurance there would be no three tier system and students with conditional offers would be able to take up their places.

Mr Carlisle is still considering a request from Mr Neil Kinnock, shadow education spokesman, that the UGC letters be placed in the Commons Library a day after despatch.

Mr Rhodes Boyson, junior education minister said in the Commons that universities should examine closely the system of tenure. Some 80 or 90 per cent of staff had tenure, he said, often to the age of 67 and he believed it had been given more easily and at a lower level than anywhere else in the world. "There will not be vast sympathy in the country when people can see the problems of unemployment elsewhere when they find that certain people have tenure for 40 years."

Cycling curate goes ecumenical



The ecumenical spirit is going to manifest itself as an additional pain in the legs for the Open University's cycling curate, Dr Mike Morgan.

For Dr Morgan's 1,500-mile marathon peddle in aid of the International Year of the Disabled, featured in *The THES* last month, has had to be extended to accommodate the wished of Roman Catholic students at the OU.

In addition to the 42 Anglican cathedrals he was intending to visit, Dr Morgan has agreed to include all 19 Roman Catholic cathedrals in England as well. It will mean lengthening the punishing schedule by an extra three days, now finishing with a welcome from the OU's vice-chancellor, Dr John Horlock after a mass cycle-in on the last leg to the university on July 27.

SERC's new chairman named

by Robin McKie
Science Correspondent

The appointment of Professor John Kingman as the new chairman of the Science and Engineering Research Council was announced this week by Mr Mark Carlisle, the Secretary of State for Education and Science. Professor Kingman will take over from Professor Geoffrey Allen, who will return to his chair of chemical technology at Imperial College when he finishes his term of office at the end of September.

Professor Kingman, who was first tipped for the job in *The Times* in January, has been professor of mathematics at Oxford University since 1969 and a fellow of St Anne's College, Oxford, since 1978.

He was elected a fellow of the Royal Society in 1971 and joined the then Science Research Council as a member of the mathematics committee in 1979. He is presently chairman of the SERC's science board.

Professor Kingman described his appointment as "an awesome responsibility". However, he added, "this is a time of critical decision-making about the future of British science and I am glad that I will be involved in those decisions."

He added that his first responsibility would be "to digest what is going to happen to Britain's universities and to try to work out a strategy by which we can best support science and research at universities."

Welcoming his appointment, Professor Allen described him as "a good man, with a lot to learn and eager to learn it". He added that he believed there were four main tasks ahead for Professor Kingman.

The first was to hold the activities of the council's nuclear physics and astronomy, space and radio boards at their present levels. "These are at an absolute minimum at present and in future he must also see we bring back a proper scientific space programme."

In basic science, Professor Kingman should "beef up physics" while in engineering he had two major roles. Firstly he had to keep the present initiatives in developing academic-industry links and secondly he had to revitalize heavy engineering, such as research into chemical plant and generating equipment.

Professor Allen added that he believed he had achieved three major goals during his own term of office. Firstly he had stopped the rot in the big science areas of nuclear physics and astronomy. "We now have the LEP project at CERN and have established good ground-based observatories when these areas could easily have gone to zero."

In engineering he had established good collaborative research schemes with industry while in basic science, available money for research had increased in real terms. "Universities mean a lot but they don't realize how lucky they are."

Kingman interview and picture page 9

Confusion over 'dismissal' letters

by Olga Wojtas

There has been considerable confusion at Edinburgh College of Art in the wake of an announcement that there will be a £50,000 shortfall in payment from the Scottish Education Department for the college's part-time staff. Six part-time members of the humanities department have received letters from their head of department which have been seen as letters of dismissal, and college students have launched a campaign against any cuts, which they say will jeopardize courses.

But the college principal, Mr Gavin Ross, has said the letters have no connection with the shortfall, and were not letters of dismissal. It was a question of the head of department trying to give his part-time staff as

More YOP funds wanted

by Patricia Santinelli

The Manpower Services Commission is poised to ask the Government to fund an extra 100,000 entrants on to the Youth Opportunities Programme bringing the total of places to over half a million, a confidential paper shows.

At next week's summit meeting of the commission board members will be asked to ratify an approach to the Government which has to be made before the summer recess in order to obtain an estimated extra gross £3m to meet the Christmas undertaking.

The paper says that current forecasts suggest an average level of unemployment of 2.5 million but that this may already be a low estimate and therefore the commission should be prepared for

further expansion of the programme.

"There are considerable uncertainties in predicting the number of potential entrants to the programme in 1981/82, but nevertheless the SPD is of the view that contingency planning for a further expansion of around 100,000 places for this year should now begin. Such a programme would be a practical target," the paper says.

Mr Jim Prior, Secretary of State for Employment, is known to favour the approach. Recently he told the Commission Area board members that he now saw YOP as a permanent programme of vocational education and training plus work experience. He knew that it had to be enlarged and was currently discussing this with other cabinet ministers.

Townsend attacks social survey division cuts

by Charlotte Barry

Proposals to cut the Government's social survey division amount to a restriction of democracy, Professor Peter Townsend told the Royal Statistical Society last week.

Most social scientists were dismayed at the recommendation in a recent White Paper to severely reduce the scope of the Office of Population, Censuses and Surveys, he said.

Professor Townsend, professor of sociology at Essex University, predicted that the cuts would restrict the flow of information which aided the free discussion of industrial, economic and social conditions in Britain. This was unacceptable in a country with greater social inequality than the United States, he said.

"In the guise of cutting manpower and saving money these measures seem designed to reduce criticism of Government policy," he told the meeting in London.

This determination to remove sources of criticism in certain areas of research and academic activities had already been demonstrated, he claimed. The Social Science Research Council had suffered disproportionate cuts and the Centre for Environmental Studies had been closed down.

Professor Townsend's critical re-

marks reflected the general tenor of the meeting, which was attended by more than 200 statisticians employed in universities, Government departments and independent research units.

Professor Harvey Goldstein, chairman of the Social Science Research Council's statistics committee, said that Sir Derek Rayner's review of the Government's statistical services threatened public access to data which was essential to social science research.

Sir Claus Moser, former head of the Government's statistical services, criticised the negative tone of the White Paper. He said it stressed what ministers could do without, and failed to take into consideration the wider role of the statistics service to serve the public.

He added it would be "sheer madness" to cut the social survey division which was probably the best in the country. It was also misguided of Sir Derek to propose cuts in quality checks and verifications.

The present head of the Government's statistical services, Sir John Boreham, defended the recommendation. He said he welcomed the review as an opportunity to reshape the service, make greater use of the private sector and improve efficiency.



Introduction of new generations of faster computers is being speeded up by sophisticated instrumentation being developed by a research team at City of London Polytechnic.

They have refined their secondary ion mass spectrometry technique - known as EVA - into one of the best methods in the world for determining the quality of silicon chip material. The team, Dr Mark Dowsett (left) and Dr Ewan Parker (right), has been helped over the past nine months by world expert Dr Klaus Wittmann (centre), Sir John Cass' visiting research fellow.

Trafford strike called off

by David Jobbins

A threatened strike by college lecturers in Trafford has been called off following a last-minute decision by the local education authority to back away from compulsory redundancies.

Union leaders had argued that Trafford was breaking the latest interim redundancy procedures agreement by announcing seven redundancies effective at the end of August instead of giving one year's notice.

The four-day strike was called by staff at North Trafford college, where the redundancies were to take place. It had already been postponed once because of progress made in negotiations between the education authority and the National Association of Teachers in Further and Higher Education.

This week the education committee accepted that savings could be achieved by natural wastage and that no compulsory redundancy or redeployment would be needed, and Nutham abandoned its strike which was due to start the following morning.

Trafford's about-turn immediately hailed as a limited victory by union leaders. General secretary Mr Peter Dawson commented: "The firm stand taken by our members and officials has produced a settlement, but we are still very concerned about the future of educational provision within the Trafford authority. This settlement at least provides a basis for consultation."

But union officials agree that the fundamental question of Trafford's attitude to the redundancy procedures agreement reached earlier this year in the national joint council remains unresolved.

Trafford has consistently resisted the argument that because it once operated the 1973-75 procedures agreement by giving one year's notice to lecturers who lost their jobs in a cut back of overseas student numbers, it is bound by the interim agreement reached pending a comprehensive national formula.

Scots students' housing plight

Between five and 10 per cent of Scottish students could be homeless at the beginning of next session, the next chairman of their union warned this week.

"Building societies still haven't come to terms with multiple signature mortgages, and this is undoubtedly a major reform which will have to come if the rented sector keeps declining," said Mr Neil Stewart, who takes office next month.

"Local authorities will also have to take a more flexible attitude towards students prepared to live in council houses."

Mr Stewart criticized student halls of residence charging £30 a week. "Hostel charges should be fixed to around 54 per cent of the student grant - some are charging 62 per cent."

In hostels where fees have increased more than the seven per cent increase of the student grant, if students decide to take rent strike action, they will have our full support," he said.

News in brief

Leaflet urges graduates to fight cuts

by David Jobbins

A leaflet calling for graduates to fight the university cuts is being handed out by white-collar graduates at graduation ceremonies this week.

Drafted by the National and Government Officers Association, it asks graduates to write to their MPs, demanding that the Government "protect the country's future in higher education."

The leaflet says: "If there is any end to the current economic crisis it follows that the country must be prepared for rapid industrial and commercial recovery. Now is the time to ensure that we are educating with the skills and expertise to aid that recovery."

Professor John Rex gave the lecture on *The Integration of Black Citizens* to mark the 10th anniversary of the Social Science Research Council's unit on ethnic relations which he is the director of a University. He examined the impact of immigration on the British race relations in this country and the next round of talks on July 2 will reach a firm view on what should emerge.

Students at more than 70

colleges were preparing to strike outside hospitals and theatres over Government plans to overseas students and visitors to the National Health Service. It is particularly concerned at increasing discrimination against Asians, and the extra he student doctors and nurses have to interrogate patients' origins and rights before treatment.

The Science and Engineering Council will soon announce a year specially promoted program construction management, but this field. When a co-ordinated shortly, work will on bids for research projects.

Professor Fredrick Kipping is work in the laboratories of the University helped by the fund for the booming microelectronics industry, is to be honoured by a memorial plaque in the building part of Trent Polytechnic. He was one of Professor Kipping's students, will unveil the plaque at the Arkwright Building on Monday.

The principal of Napier College, Edinburgh, Dr Joseph Dunne, announced that he will retire after becoming the first principal of the college. The college, one of land's major further education centres, now has about 3,500 students and 400 taking postgraduate awards including research.

An exhibition marking the 50th anniversary of the Festival of Britain and 50 years of the Gilbert Scott's buildings opens today at the college. Patricia Hayes performs at the opening at 3 p.m. Mr. Rusklin, William Morris, and Burne-Jones and Kate Greenaway are on display.

The London College of Fashion launch a new postgraduate course in the design of costume and accessories. The course, which will start in September, aims to bridge the gap between the para-medical professions and designers. It will be validated by the National Academic Awards.

The new vice-principal of St. Anne's University is to be Professor J. J. Jeaves, head of the psychology department. He will hold office for the beginning next session.

Threat to new TUC alliance

by David Jobbins

Trade union leaders representing 5.5 million workers in education are seeking to prevent sectional in-fighting which could stifle the TUC's infant educational alliance at birth.

A second meeting to set up the alliance, which also brings in 1.2 million students and a wide range of voluntary groups with a direct interest in education, takes place early next month.

The question of provision for 16-19s is emerging as a priority for the alliance. But some unions whose membership is not directly involved with the age group are anxious that the issue should not submerge other areas of concern.

"There is no question of playing one thing against another - the education system is a unitary one," Mr Laurie Supper, general secretary of the Association of University Teachers said.

So far the embryo alliance is displaying a remarkable unanimity, with every TUC-affiliated union connected with education involved. A preliminary meeting agreed to refer a draft manifesto setting out the alliance's aims to the various executives, and it is expected that the next round of talks on July 2 will reach a firm view on what should emerge.

Officials expect the manifesto to be announced before the Trades Union Congress in Blackpool in September, to be followed by a major national conference later in the autumn.

While the 16-19s issue seems to be the most widely acceptable topic for this conference, and all organisations involved accept it is important, there is a substantial minority which is concerned to avoid establishing a pecking order of priorities.

"It is a question of tactics whether a conference should be on this or on other education issues in the wider sense," a TUC official said.

The National Union of Students is one of a number of non-TUC organizations to pledge support for the alliance. "It is the only effective way to oppose current Government policy," president Mr David Aaronovich said.

"Education is a major wealth-producing part of the economy and the Government attitude is lamentable. We must all combine to change this attitude."

Bad start for arts graduates

Polytechnic arts graduates had much the worst unemployment rates of 34 groups of students finishing degree courses in 1979, according to a survey published this week.

The new edition of *What Do Graduates Do?* divides university and polytechnic graduates into 17 subject groups and analyses their first destinations. The highest proportion still unemployed at the end of 1979 came from polytechnic courses in art and design, followed by their colleagues in English and history.

More than 14 per cent of graduates in all three groups were registered as unemployed. Polytechnic graduates in modern languages, biological sciences and sociology also showed unemployment rates of more than 12 per cent in a year when the overall rates for the group surveyed were 7.3 per cent for polytechnics and 4.9 per cent for universities.

Among university graduates, those on psychology courses were worst hit, with 9.2 per cent unemployed at the end of the year. But only in mathematics and computing, and law, both of which had very low unemployment rates, did university graduates fare worse than those from polytechnics.

In general, science and engineering graduates were more successful in finding jobs of course of further training than their counterparts in the arts and social sciences. Marginally higher proportions of women than men were listed as unemployed, but more than half the graduates from both sectors were in permanent employment by the end of the year.

Union secretary in tenure row

Discussions were planned this week at Leeds University on a recommendation to make an administrator redundant. It could turn out to be a test case on the question of tenure.

The proposal, to be discussed by the university council on Thursday, was to make redundant Mr Arthur Izatt, aged 53, the permanent secretary of the student's union. He is employed by the university as a member of the academic-related staff and is a member of the Association of University Teachers.

The position is complicated because Leeds has no "good cause" provision in its statutes, which normally constitutes the existence of tenure. But the AUT, which is opposing the redundancy, nevertheless maintains that tenure exists and there is no reason for his dismissal.

The initiative to make Mr Izatt redundant came from the students' union, which has made internal changes and argues that his job requirement has ceased or become diminished.

A university spokesman confirmed that the recommendation for redundancy would be going to council and that this was opposed by the AUT, which wished the university to defer the matter for further procedural discussions.

The recommendation arises from internal staff changes and is not related to the actual or anticipated financial position of the university. The university has two procedural agreements with the AUT for terminating staff appointments, one for disciplinary reasons, and the other for non-disciplinary reasons.

Under the second agreement it has to be proved that the person has not been carrying out duties satisfactorily for non-disciplinary reasons. What Council will have to decide, and which the AUT disputes, is whether redundancy can be included within this category. A further point to be clarified is whether the university has a statutory right, notwithstanding the agreement, to dismiss a person for reasons of redundancy.

A Strathclyde University spokesman announced firmly that he was quite certain that nobody in the university knew who the donor was. "There are two conditions attached to the money: that it be spent on residences, and that there is no attempt to discover the donor's identity," he said.

Edinburgh is using the money to complete a 150-place student residence in the city centre. The project could not have been finished in the foreseeable future without this benefaction, which will allow a derelict Georgian tenement to be restored.

Both Glasgow and Strathclyde will build accommodation for around 100 students. Glasgow's principal, Dr Alyn Williams, said the anonymous donor had previously given £300,000 in 1976 for an extension to a residence. London University has received £7m.

Dr Williams also announced further development plans for the university, made possible by grants and gifts totalling more than £3m. The library complex will be expanded, providing another 400 reading places and more space for the medical library.

Dr Boyson came away from his first visit suitably impressed, as well as clutching a handful of grinds donated by the students. One place based on the alphabet is destined for a Boyson grandchild. His only regret - he did not get an ice cream as well.

The RCA is currently putting the final touches to an official reply to Dr Boyson's criticisms that it has strayed from its main task of aiding British industry.

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Report criticizes record of multicultural training

Teacher training institutions are failing overwhelmingly to prepare teachers for their role in a multicultural society, the long-awaited report of the Rampant Committee published this week says.

"Evidence shows that in very few institutions is a grounding given to all students in how to appreciate and understand the experiences and cultures of ethnic minority pupils, or how to help persons who may not have had much personal experience of our education system," the report says.

The committee's interim report - the whole question of initial training is to be looked at again in the main report - says that this failure at initial level is due primarily to uncertain leadership on multicultural education by those in charge of institutions which is compounded by the absence of guidance from the Department of Education and Science.

Other factors are teachers' well-worn traditional attitudes, the sheltered nature of campus life, which means that teachers' trainers are out of touch with reality, and the lack of new staff with recent practical teaching experience.

The report points out that although there are examples of good practice, all institutions should review their work and, for example, develop a multicultural approach to each individual subject. However, all initial courses should offer an introduction to the nature of West Indian Creole.

In contrast to initial training, the report points out that in-service provision presents a more positive picture. But it stresses that this varies widely and that local education authorities should ensure that the range of courses relate to the needs of all pupils in their schools.

Local authorities should also seek to recruit more West Indian teachers with applicants as they attract a very high proportion of students locally. Ninety-four per cent of Glasgow's students are Scottish and 75 per cent of Glasgow's and Strathclyde's students live within travelling distance of the universities.

Aberdeen, finding the number of applicants from outside the North-East growing, decided in principle five years ago to join UCCA, contingent on the two other universities joining which they refused to do.

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Mystery donor's next £1.5m

by Olga Wojtas
Scottish Correspondent

The anonymous donor who has endowed university colleges and a polytechnic in London with gifts of millions of pounds has provided a further £1.5m for student residences at three Scottish universities.

There has been renewed speculation that this anonymous benefactor is the Queen Mother, but go-between, Lord Murray of Newhaven, former chairman of the University Grants Committee, has vigorously denied this.

A Strathclyde University spokesman announced firmly that he was quite certain that nobody in the university knew who the donor was. "There are two conditions attached to the money: that it be spent on residences, and that there is no attempt to discover the donor's identity," he said.

Edinburgh is using the money to complete a 150-place student residence in the city centre. The project could not have been finished in the foreseeable future without this benefaction, which will allow a derelict Georgian tenement to be restored.

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Overseas students lose fee subsidy

by Paul McGill

Overseas students in Northern Ireland are to lose the concessions which sets their fees at the same level as home students. The subsidy will be phased out over four years but institutions will still be allowed to set charges considerably below those in the rest of Britain.

The Department of Education made no announcement of the change in policy, but conveyed it privately to the two universities and the polytechnic.

Forty per cent of the deficiency grant element attributable to each overseas student enrolled in 1980/81 will be deducted in the coming year, another 40 per cent in 1982/83 and the remainder the years after that.

Northern Ireland will continue to be different from the rest of the United Kingdom in that much lower minimum fees are being laid down, £900 for undergraduates and £1,320 for post-graduates – the same as for home students. The colleges can charge anything between these figures and £5,000, although the actual amount is likely to be much nearer the bottom than the top.

The cutback will affect Queen's University most, since it has about 240 of the province's 350 overseas students. The vice-chancellor, Dr Peter Froggatt, estimates this year's loss from the Government grant to be about £400,000, rising to £1m in 1983/84. The New University of Ulster, with about 40 overseas students, and the Ulster Polytechnic, with around 70, will also suffer.

The Department of Education said the change was part of the Government's general policy of withdrawing the subsidy to students from outside the EEC. It predicted that the number of foreign students coming to Northern Ireland would continue to rise because fees would be lower than in Britain.

But the change is clearly worrying Dr Froggatt, since the loss comes on top

of anticipated volume cuts and other hidden reductions to make a total next year of six per cent. Writing in the latest issue of the university bulletin, he says that the reduction in the budgetary base-line is likely to be irreversible in all but the longest term. As a result, "it is not appropriate to rely exclusively on well-tried expedients for temporary savings, e.g. freezing of posts, deferring maintenance; more permanent measures are also necessary," he argues.

The vice-chancellor claims that time-provisional estimates for next year including the freezing of almost 100 posts, should produce a break-even result, or even better, but the highly professional estimates for next year indicate a seven-figure deficit, even with a near-embargo on new posts and replacements. "Later years in this triennium of tragedy are obviously worse unless new policies are implemented," add Dr Froggatt.

The university has already set up a special committee to recommend substantial savings to see it through. In the short term this is likely to involve reduced spending on cleaning, telephones, electricity, catering and so on. Beyond that, the possibility of redundancies has not been ruled out.

Elaborating on his article, Dr Froggatt said that Northern Ireland was in the worst possible position. Local institutions would not be covered by this month's letters from the University Grants Committee. Instead, advice on what reorganization might be expected will have to wait for the Chilver report in the autumn at the earliest.

Universities in Britain will be given three years to adjust to reduced budgets. "The very best we could get in Northern Ireland is two years and we may only have one year," he explained. As a solution, Dr Froggatt recommended that the whole planning cycle in the province should move one year behind Britain.

Serious debate on archives long overdue, says report

by Paul Flather

A serious and informed debate geared to producing a national policy to safeguard the country's important private records and archives is long overdue, according to a report reluctantly released by the Government this week.

An independent review of the work of the Royal Commission on Historical Manuscripts, completed in April 1980 by Mr Daniel Caplan, a former civil servant, was published this week after pressure in public and parliamentary circles.

The report is highly critical of the Royal Commission, describing it as a "self-perpetuating body" with too many elderly members meeting too rarely to be effective. Only six of the 17 members are under 65, seven are aged 73 to 87. It meets twice a year. The Royal Commission dissents from these views.

The main tasks of the commission, set up in 1869 and now chaired by Lord Denning, Master of the Rolls, are to protect, locate and list private archives in the National Archive Register (NAR), advise the Treasury on accepting archives in lieu of tax, and advise

the Government on archive policy. Mr Caplan recommends that the Royal Commission be abolished in five years if it does not reform its workings, that members should sit for five years and retire at 75, and that the bar on professional archivists becoming members be lifted.

The report also details the growing threat to private records – not, it says, a new threat, but one increased by economic pressures on owners, by the expanding international market for records, and by large cuts in library budgets.

"It would be unwise to take a static view of the situation. The threat of sale and dispersal remains, and is bound to be heightened by each new inflationary twist," the report reveals that 174 of the 400 private collections reviewed by the Commission between 1914 and 1969 had been sold in part or whole.

A new phenomenon was "the unpleasant surprise" faced by libraries when owners suddenly called for the return, for disposal in the sale room, of their collections deposited on loan, their cash value often enhanced by the archive work done by the library.

Robotics course at Cranfield

by Robin McKie

A degree course in robotics – believed by Cranfield Institute of Technology to be the first offered at a western university – is to be launched at the institute in October.

The one-year course will be taught by the Cranfield Robotics and Automation Group and the MSc programme is intended to provide a blend of group work, industrial visits, seminars, laboratory investigations, lectures and student projects.

Professor Keith Rathmill, of CRAG, said that although students with some industrial experience would be at an advantage, they were mainly seeking those with good first degrees and an interest in industrial practice.

"There is now a dangerous shortage of men and women with the awareness and skills needed to apply robots in industry," he added.

"If we wait five years before we start introducing intelligent robots we shall have lost the race in western Europe – which is already trailing behind America where, in turn, they are trailing behind Japan, with around 3,000 robots installed and working in factories."

Professor Rathmill said that although robots would replace human beings in jobs such as those involved in assembling complex components, they would also create employment requiring greater intellectual involvement, such as designing, manufacturing and installing robots.



Alison Lyall, a final-year student at Napier College in Edinburgh, sits in one of her nursery chairs during college's exhibition of interior design students' work.

Review for adult sector grant aid

The Government is planning to review its distribution of grant aid to national associations dealing with adult education.

In a letter to the dozen associations which receive direct funding from the Department of Education and Science it says it intends to maintain the total level already provided – about £4m. However this money may be redistributed to ensure it is used more effectively.

The associations affected by the shake-up include the National Association of Adult Education, the Educational Centres Association, the Workers' Educational Association, as well as bodies only partly involved in educational activities. These include the National Federation of Women's Institutes and the National Union of Townswomen's Guilds.

The DES considers the review necessary because of changing educational needs among adults. The letter says that associations thinking of applying for funds must be national in scope and the main providing body in their particular field.

At the same time as showing a clear need for Government support they must provide proof of their ability to attract funds from other sources.

The DES has asked the associations to give it a picture of their present circumstances and future plans within the next two months. The review will be completed by the autumn and will affect grant allocations for 1983-84.

New clinical unit

Aston University's clinical neurophysiology unit, the most comprehensively equipped centre in the UK for the diagnosis of brain damage, was opened this week.

The £250,000 unit, which was opened by Mr John Bettinson, chairman of the Birmingham Area Health Authority, examines the effect of vision and hearing of brain tumours, as well as other ear injuries and industrial deafness.

How to survive next teacher training upheaval

by Patricia Santinelli

A blueprint for the 1990s to enable both the university and public sector to survive the next upheaval in teacher training is proposed in a special issue of Educational Review.

Professor Ted Wragg of Exeter University's school of education, argues that universities must be quick to respond to new developments as well as to initiate them.

For example one of the first roles of schools of education in the research field should be not only to communicate and interpret their own findings but those of others. And they should increase their own research output through two kinds of projects. One is

Sandwich placements slump for engineers

by Ngao Crequer

More than a third of polytechnic engineering students on degree level sandwich courses have failed to find industrial placements this year, according to a new national survey.

In the universities there has been a drop of 20 per cent in the numbers of placement available, and these new figures will put more pressure on the Government to introduce changes to the sandwich course system.

The survey of polytechnics and the ten technological universities was conducted by the Sandwich course Research Unit at Brunel University, and has been given to Dr Rhodes Boyson, junior education minister, who is making an urgent review of sandwich course provision.

Mr Alan Daniels, director of the unit, said this week: "I believe this report illustrates the seriousness of the situation very accurately and we will be fighting extremely hard during the next few months to get assistance from the Department of Employment to see us through this difficult recession."

Computer staff expect offer

by David Jobbins

A low pay offer to Britain's 800 university computer staff was expected as union leaders met the employers late this week.

But there was optimism that agreement could be reached for the first time on national pay rates for shift work. The feeling shared by leaders of the National and Local Government Officers' Association and the Association of Technical, Managerial and Scientific Staff – that a low offer would be made – has been reinforced by two factors.

The employment boom for computer staff elsewhere seems to have ended; reducing job mobility, and university staff had a significant boost of more than 15 per cent only a few months ago from the Clegg Commission.

enhance the school's need for flexible teachers able to operate both in the primary and secondary sectors. Currently universities are not equipped to devise or extend primary postgraduate certificate of education courses.

The second is directly due to changes in society with decreased employment and increased leisure.

In addition factors such as the enormous explosion of knowledge and the increasing importance of new technology require that PGCE courses be geared to impart student teachers with new teaching strategies. Furthermore, student teachers should be encouraged to engage in research as part of their initial training, so as to fit them to life long teacher researchers.

"If we do not get assistance it is fairly sure that many sandwich courses will revert to courses providing 21 time tuition, and I cannot see the courses being reinstated once the recession is over."

The survey highlights some 40 areas of concern which the relevant bodies have to cover. For example, in polytechnics, of the 1,037 placements needed this year for electronic engineering, only 500 (6 per cent) were found. The corresponding figure for the universities was 10 per cent.

But the universities have difficulty finding places for production engineers. Only 52 per cent were placed this year, compared with 67 per cent for the polytechnics. In quantity as well, 60 per cent of polytechnic students were placed, and 35 per cent of university students.

Written contributions, by the end of July, should be sent to Mr David Wilkinson, Further and Higher Education Branch 1, DES, Elzabeth House, York Road, London SE1 7PH.

Liverpool looks for £3m savings

by Paul Flather

Liverpool City Council is again considering plans to close one of its colleges of higher education, merge courses, and even sell off college sites to help meet an estimated £3m shortfall on higher education provision this year.

Councillors and education officers have informally asked for site valuations and canvassed a series of merger options, and also made a strong mitigation plea to the Department of Education and Science to help make up the deficit.

For the second year the council has left it very late to finalize details of its education budget. But this year it has made it clear that no money is available from the rates to make up the 16 per cent deficit on an £18.9m budget. It has a no redundancy policy.

Last month the authority sent letters to the governing bodies of its four main institutions – Liverpool Polytechnic, City of Liverpool College of Higher Education, F. L. Calder, specialising in home economics, and I. M. Marsh, a physical education college – asking how the cuts could be met.

All four colleges have set up internal working parties but no decisions are expected until the education committee meets in September. This week a council working party meets to discuss long-term strategy, including mergers and closures.

The most vulnerable college appears to be F. L. Calder, which suffers from high unit costs. I. M. Marsh has recruited well to its BEd degree. Courses run by both COLCHE and the polytechnic which could be merged include sociology and geography honours degrees, and biology, maths, history and language degrees.

Officials of the National Association of Teachers in Further and Higher Education are angry at the confusion and delays in finalising the education

budget. "How can we decide what action to plan for the future when we just don't know what is happening," one official said.

Dr Gerald Bulmer, rector of the polytechnic, said quite bluntly a £2m cut, the amount of savings expected at the polytechnic, was absolutely out of the question. "I cannot see how such cuts can be made, particularly with a no redundancy policy."

Since Easter the polytechnic has imposed a blanket freeze on all academic staff vacancies to try to improve its student staff ratio, currently ranging from 8.5 to 9:1. The city council is also working on a long awaited early retirement scheme for lecturers.

But Dr Bulmer wants powers to decide for himself which staff should be allowed to leave. "A policy of natural wastage and redundancy will not deal with all our problems quickly enough," he said.

"Unless there is a system which allows us to decide where staff could be released and where we cannot afford to allow staff to go on any terms, we will never succeed in overcoming our problems." He favours a policy of "directed redundancy". His remarks echo problems faced by Middlesex Polytechnic where 72 staff took early retirement and the polytechnic now has to replace about 10 key vacancies.

The polytechnic expects to manage a £600,000 cut this year, by halving its budgets for library books, field courses, staff travel and maintenance. COLCHE meanwhile has 25 posts vacant at present.

This week officers from the Council for National Academic Awards were carrying out a quinquennial review visit at Liverpool. Dr Bulmer said he was confident academic standards had been maintained. "But we cannot go on making cuts. Otherwise we will have to consider cutting back on 1982 student entry."

DES considers cash aid for continuing education

by Owen Surridge

Short-term financial aid may be made available by the Department of Education and Science to enable new projects to get off the ground in continuing education. This was revealed by Mrs Carol Chataway, an assistant secretary at the DES, in an address to a conference of polytechnic and college lecturers held in Manchester.

On the difficulties of working within a fixed fund budget she said: "We recognize the need for some working capital for the initial developmental costs of new courses, even if it's repaid when the provision is taken up successfully. One way of obtaining this is to take such costs fully into account in allocating resources to institutions and we are looking into this."

But any such aid would be limited and there was no prospect of large sums becoming available. "We are considering how support might be given rather more widely to stimulate the development of new techniques and materials; co-ordinate initiatives; disseminate information; advise and even initiate training courses for those unfamiliar with the new techniques or with the problem of developing new types of provisions."

In a reference to what she described as "a bewildering variety of needs for post-experience vocational education," Mrs Chataway said it was not just a matter of meeting the updating needs of managers, the professionals and other key people but of the entire work force, particularly women. Deciding what should be provided was difficult because the whole question was bedevilled by ignorance, educational institutions being uncertain what to offer and employers where to turn for the kind of courses they wanted.

"Improved collaboration seems to me essential," she said. "Without it institutions not yet convinced of the possibilities of post-experience education will not chance their arm in a difficult, expensive and time-consuming area which may not attract sufficient numbers to be cost effective."

Innovations would have to be carried out on a full-cost basis. "We have to face a period of, at best, level funding for further and higher education," Mrs Chataway said.

"If no additional resources are available the only other logical way of developing post-experience education, would be to effect a significant switch in the balance of resources from initial to continuing education – but I do not need to spell out the wider implications of such a move."

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unlikely to improve but on the contrary will deteriorate further in 1981-82. The survey shows that in some cases there was sole reliance on Youth Opportunities Programme-financed provision which is regarded by many careers officers as totally inadequate in content, staffing support and length, never having been intended to meet the needs of handicapped young people.

"Yet it is obvious that the vulnerability of such young people both in terms of competing for increasingly scarce employment opportunities and surviving in a job demands specific and often long-term education and training to safeguard their future," the report says.

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Hull v-c draws defence lines

by Ngao Crequer

Sir Roy Marshall, vice-chancellor of Hull University has said the university must take every available step open to defend and preserve itself.

In a statement to Senate he said: "I did not regard it as part of my job when I took up my office to put people out of work. If I am forced to do so, I shall regard it with the utmost distaste."

He said he could not guarantee that redundancies would not be forced upon the university and, if they were, proper compensation would have to be paid to those affected, and the academic viability of the university must remain intact. Change was welcome when it was necessary, but we should not lightly dismantle any part of our

institution which has taken so many years to assemble and of which we have every reason to be proud."

Sir Roy said a working party was already trying to identify savings for this year of up to £750,000 and it was their hope to do this without redundancies. "But there is a point beyond which we cannot throw the burden of all economies on non-payroll expenditure and natural wastage. We have to look at that point not only in relation to 1981/82 but also 1982/83 and 1983/84."

The working party had examined different ways of augmenting income, or making savings, including transferring costs to consumers; reducing services; increasing efficiency; and improving more budgetary control.

Sir Roy said he had received letters asking the university to protest against

the selective cuts. He said more should be known before that position was adopted.

The universities, for example, were not being told what criteria the University Grants Committee was using to determine its rationalization exercise; mismatching of staff and students numbers; dislike of the social sciences; viability of small departments; or the cult of usefulness and relevance.

Further, he asked, were the cuts irreversible and was the trauma of redundancies likely to produce benefits commensurate with the costs. "Would our view be the same if we are selected for no cuts or minimal cuts? All this information and more we shall need to press for before we really start sounding off in every direction."



Sharing the honours... William van Straubenzee, who is knighted, and Frederick Sanger and Lord Boyle, who become Companions of Honour.

Honours for two former education ministers

Two former Conservative education ministers, Lord Boyle and Mr William van Straubenzee, the Conservative chairman of the Council of Local Education Authorities, Mr Alastair Lawton, and double Nobel Prize winner, Mr Frederick Sanger, all figure prominently in the Queen's Birthday Honours List announced last week.

Lord Boyle of Handsworth, education minister from 1962 to 1964, vice-chancellor of Leeds University since 1965, and a former chairman of the committee of vice chancellors and principals, is made a Companion of Honour along with Mr Sanger.

Mr Sanger, a biochemist with the medical research council since 1951 and a fellow of King's College, Cambridge, won the Nobel Prize for chemistry in 1958 and in 1980.

Mr van Straubenzee, the elder statesman of Tory backbench MPs with a particular interest in drama education, was a junior education minister.

Mr Alastair Lawton took over as chairman of the CLEA last year and has played a significant part in producing an alternative to Government plans to

create a new public sector national body. He is chairman of Kent education committee, and receives a CBE.

Other academics honoured include Professor Peter Forrester, director of Cranfield Institute of Technology, management school since 1967, and pro vice-chancellor since 1970, who gets a CBE, and Professor John Micklethwait, professor of radiobiology at Bristol University, who is knighted.

Mr G. D. N. Worswick, director of the National Institute of Economic and Social Research since 1965, who has written extensively on British economy, profits, and unemployment, and not always agreed with Government forecasts, also receives a CBE.

Other well known figures in higher education include Mr Francis Manon, chief officer of the Technicians Education Council, and Mr Brian Oakley, secretary of the Science Research Council, who both receive CBEs. From the polytechnic sector, Mr Gerard Dearden, assistant director of Newcastle Polytechnic, gets the OBE.

Other awards: Neil Marlen, Minister for Overseas Development responsible for overseas students.

Angus Bachelard, Professor Ivor Bachelard, professor of psychiatry, Dundee University; J. D. Clarke, president of the Law Society; Professor Thomas Smith, QC, for services to British Law.

CBEs: B. J. Greenhill, director of National Maritime Museum; J. L. H. Kitchen, architect, Department of Education and Science. Order of St Michael and St George: R. A. F. Sherwood, an dr-gren British Council.

National body would entail 'mini-Pentagon'

by Biddy Passmore

A "mini-Pentagon" of officials would be needed to run the Government's proposed national body for public sector higher education, a leading Conservative has warned.

Mr Maurice Venn, a Hounslow councillor and chairman of the Standing Council of Regional Advisory Councils, said he did not believe the proposal that had been leaked earlier this year would lead to administrative streamlining, as the Department of Education and Science claimed.

But he accepted that a national dimension to the planning of polytechnics and colleges was long overdue. "The whole sector has been a rudderless ship for more than a decade and Government after Government has failed to act," he declared.

Mr Venn was speaking at the Conservative education conference in support of a motion calling on the Government to drop its plans for "nationalization" and to support alternative proposals put forward by the Council of Local Education Authorities. The motion was carried by an overwhelming majority.

Fees were now so high that the private sector had become attractive to foreign students. The council had set up a working party with the dual purpose of encouraging reputable institutions in the private sector, while seeking to protect unsuspecting students against the rest, he said.

"UKCOSA has already become aware of a number of fraudulent agencies and spurious colleges seeking to exploit this market," Mr Bristow warned.

The impact of full-cost fees generally had been as severe as expected in their first year of operation and the country was witnessing a fundamental change in the profile of the overseas student population.

Mr Bristow also criticizes the complexity and nebulous nature of the concept of "ordinary residence," which led to students on the same courses paying a wide variety of fees.

UKCOSA Annual Report 1980-81, available from 60 Westbourne Grove, London W2.

Students told: beware of bogus colleges

Increased fees for overseas students in universities and public sector institutions have encouraged the spread of "fraudulent agencies and spurious colleges" seeking to exploit the market, Mr Rupert Bristow, executive secretary of the United Kingdom Council for Overseas Student Affairs, says in his annual report.

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North American news

US falls back in exchange programmes

from Clive Cookson
WASHINGTON

The United States government has allowed its support for international educational exchanges to decline steeply over the past 15 years. America's exchange activities are operating at levels well below those of most of its Western allies and its rivals in the Soviet bloc, according to a new coalition of educational associations here.

The International Educational Exchange Liaison Group, as it is called, released its first policy statement at the recent meeting of the National Association for Foreign Student Affairs (NAFSA) in Nashville. It calls on Congress and the Reagan administration to reverse the "serious decline," which started in about 1966/67, by giving a "significantly increased appropriation" to exchange programmes.

The language of the statement is designed to tone in with the current political support for stronger national defence. The 16 organizations in the liaison group, ranging from the Institute of International Education to the Committee for Scholarly Communication with the Peoples Republic of China, describe their activities as "the non-military aspects of defence" which "correct distorted images of America in the minds of men and women throughout much of the world."

"Of the resources employed in the pursuit of US foreign policy objectives, few have been as quietly effective as the educational and cultural affairs components of American diplomacy," the group says.

The United States International Communications Agency (USICA) is the government department most concerned with educational and cultural exchanges. It runs the Fulbright programme, the main official vehicle for exchanging students, researchers and professors between the United States and the rest of the world, and provides partial funding for American organizations that administer exchanges with specific regions of the world, such as AMIDEAST (the Middle East) and the International Research and Exchanges Board (Eastern Europe and the Soviet Union).

In real terms this year's USICA budget for educational exchanges is only 60 per cent of the 1965 level, according to the liaison group. And other federal agencies with significant educational exchange programmes, the Agency for International Development, Peace Corps, Education Department, National Science Foundation, and National Endowments for the Arts

and the Humanities — "have also declined in recent years in relation to growing needs."

Borrowing a comparison from John Lenczowski, a Soviet affairs lecturer at the University of Maryland, the statement points out that Procter and Gamble spends more money advertising soap than the annual USICA budget, "and yet we somehow expect the agency to achieve results on a worldwide scale in 'telling America's story' and enlightening our citizens at home through scholarly and cultural visits."

"If the erosion of US influence and power internationally is serious enough to necessitate a \$33,000 m increase in defence spending, is not an equally substantial increased investment called for to provide an American 'arsenal of ideas'?" the liaison group asks.

Borrowing the results of a survey by the General Accounting Office (GAO) on seven nations' international communications, cultural and educational programmes in 1979, the educational associations say that the United States is outspent by the Soviet Union and France in absolute terms and nearly equalled by West Germany. In proportion to gross national product or government expenditure, the inequality becomes more striking.

France and Germany spend one per cent of their national budgets on international educational, cultural and informational activities, the US government one-tenth of a per cent. Even Britain comes out favourably, officially sponsoring more of its students to go abroad on grants and bringing in more foreign grantees than the United States.

Despite the meanness of the federal government, American colleges and universities have been enjoying a 15-year boom in applications from abroad. The latest census of foreign students, which is conducted annually by the New York-based Institute of International Education (IIE), shows a total of 286,000 foreigners enrolled in American colleges and universities in 1979/80; that compares with 155,000 in 1974/75 and 82,000 in 1964/65.

However the boom has been fuelled by students from the wealthier industrialized and developing countries, particularly the oil-producing states. OPEC nations accounted for 100,000 students in 1979/80, compared to just 9,000 in 1964/65. And there is a strong suspicion, though no statistical proof, that a higher proportion of foreigners studying in the United States come from wealthy families than overseas students in other countries.

The IIE census shows that 65.4 per



President Reagan: may be sympathetic to the arguments of exchange organizations.

cent of foreign students in the United States relied primarily on personal and family funds to pay their tuition fees and other costs, which often exceed \$10,000 a year. Another 16 per cent were supported primarily by government or private sponsor in their own countries, while just 3.9 per cent relied on American government or private sponsorship and 9.2 per cent on financial aid from their college or university in the United States. Under these circumstances it is not surprising that the International Educational Exchange Liaison Group says, "we are not offering scholarships to poor and middle class students on a scale even marginally comparable to that of the Soviet bloc."

In 1977 the Soviet Union — whose information, cultural and educational expenditures are estimated at four times the American investment — brought 24,000 Africans to study there. Only 1,800 Africans studied in the United States under American sponsorship.

"In Latin America, the USSR offered 4,650 study and training exchanges in 1978 while the United States government offered far fewer, one-tenth that number in a hemisphere so close, so troubled and so important to our socio-economic goals and strategic thinking," according to the liaison group.

There is some evidence that the Reagan administration may be sympathetic to the exchange organizations' argument that their activities, "have never been more vital to the national

interest, in assuring 'brainpower' as well as firepower. These programmes represent vital instrumentalities with which to create a world more amenable to American values and national security."

For the President's 1982 budget cuts left the USICA educational and cultural affairs section in better shape than most other federal education programmes. Its allocation for next year is \$94m, up \$4m from 1981. In real terms, after inflation, that will translate into a decrease of three or four per cent — not an unusual experience for the agency.

"Frankly, I don't see any new dollars coming in before 1983 at the earliest," said a USICA official familiar with the congressional budget process.

The Fulbright programme, whose current expenditure is about \$40m a year, brings 1,700 graduate students and 700 senior academics to the United States each year, and sends 300 American students and 500 academics abroad. Some foreign governments also contribute to Fulbright exchanges, notably West Germany, the destination for the largest number of American scholars. The United Kingdom is one of the most sought after destinations; about 20 Americans win Fulbright scholarships for postgraduate studies at British universities, according to a USICA spokesman.

Neither the federal government nor any of the American educational exchange organizations have a reliable estimate for the total number of Americans studying abroad under their own auspices and government and university programmes. The figure is probably in the general region of 50,000, but it is certainly no more than a fifth of the number of foreign students in the United States and it may not even be increasing.

John Reichard, executive vice president of NAFSA, expresses particular concern about the decline in the number of senior American academics — as opposed to students — spending time at universities overseas. "At the senior level the number of opportunities for American scholars to go abroad is probably half what it was in the mid-1960s," he says.

That has resulted in an even steeper fall in the proportion of American students studying in their own country who are taught by professors who have had some overseas experience. According to one estimate, only two per cent of the current generation of students at American colleges and universities are exposed to faculty members who have studied at a university in another country — and that severely limits the international dimension they can add to their courses.

Conference stresses role of liberal education

from Sally Green

NEW YORK

The role liberal education plays in higher education in the 1980s will depend more on teaching the adult the typical 18 to 21-year-old undergraduate, according to Daniel J. Evans, former Governor of Washington and president of the Evergreen State College.

Mr Evans addressed higher education faculties and administrators last week at Old Promises, New Practices, a national conference on liberal education sponsored by the Fund for the Improvement of Post-secondary Education in the US Department of Education and the Exxon Education Foundation.

Liberal education is going through a modest revolution for the first time in 15 years, according to conference sponsors, as some colleges re-evaluate liberal arts courses to make room for more technical courses while others design new liberal education courses for working adults as well as minorities and technical students.

The purpose of the three-day conference was to draw attention to essential courses that may well serve as models for reformers interested in redesigning current liberal education. These models include those that offer flexible scheduling for working adults, diverse multi-cultural courses for varying student intakes, interdisciplinary projects for faculties in science and the humanities, and more structured curricula in literature and history for traditional students.

The conference, which drew about 350 participants from higher education institutions throughout the country, closely followed the release in April of the widely discussed report, *A Quiet Revolution in Learning*, by the Carnegie Foundation for the Advancement of Teaching which serves as a role model for those interested in redesigning general education courses to stress common goals, values and skills in post-secondary schools.

There is a good deal of confusion however about what specifically those goals should be in a pluralistic society with diverse student intakes. But some conference participants debated that issue, others pointed to what they see as a major trend — that the revival of liberal education is not a return to traditional students at institutions such as Harvard University but in these institutions once seen as being on the periphery of higher education's mainstream: community colleges, alternative schools, and experimental colleges.

These institutions, developed in the 1960s and 1970s to meet the needs of an increasingly diverse group of students may now be where liberal education will be reshaped in the years ahead.

Mr Evans claims that many adults are returning to school "to seek special training to compete better in an uncertain economy. In fact, many will be best served by the intellectual challenge of liberal education. Existing courses exist today which vividly demonstrate this trend," he said.

Other projects described during the conference's 36 sessions included the reform efforts at specialized schools such as Malcolm X College in Harlem, New York; faculty improvement projects such as the interdisciplinary one at Harvey Mudd College in Claremont, California, and the redesigning of an entire liberal arts course such as that at St. Joseph's College in Rensselaer, Indiana. The message drawn from the conference was clear: no post-secondary school is immune from the current reexamination of liberal education and the discussion is just beginning.

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Overseas news

Students fight the 'shark' entrepreneurs

from A. S. Abraham

BOMBAY

Medical students in the south Indian state of Karnataka are fighting the state government's policy of allowing private entrepreneurs "sharks" to set up their medical colleges which admit only those students who can afford the high signing-on fees.

Thanks to official encouragement — the state chief minister has exhorted every caste-group in Karnataka to set up its own medical college on this basis — educational sharks are scrambling to make hay while the sun shines. Karnataka, a small state by Indian standards, already has 13 medical colleges, nine of them privately run. Six of these nine sell their seats to the highest bidder. At least 30 applications to start more colleges have been made to the provincial government.

Candidates flocking for admission come from all over the country. Indians abroad as well as foreign nationals, mainly from Third World states, also apply because it would, despite the signing-on fee, still be cheaper for them to study in India than in the West. This is because British, American and other Western countries are tightening up on foreign student admissions to medical colleges and not expanding medical education opportunities adequately.

And because Indian medical degrees carry some prestige, especially in the Third World, but also in the West. Thanks to the demand from abroad, some of the colleges in Karnataka demand payment of the capitation fee in foreign exchange. The going rate is said to be 20,000 US dollars for applicants living abroad.

The young protestors, who have been campaigning against the commercialization of medical education in Karnataka and against its effects on the quality of that education, have not had much success since they started their battle several months ago. The federal health minister has written three letters to the provincial government asking it to give up its policy and to crack down on, instead of encouraging, the corruption of medical education in the state.

This followed a provincial government order a year ago permitting private medical colleges to charge a special fee of 20,000 US dollars for a specified number of seats.

The federal government has also assured protesting students and interns that it will not recognize new colleges that levy the fee.

Not to be outdone, the Karnataka government pre-empted any such move by arming itself, through an ordinance, with the power to confer university affiliation on any college directly.

The syndicate of Bangalore University has challenged the Karnataka government's ordinance in the state High Court. To pre-empt an adverse judgment, the provincial government is proposing to set up a separate "Health University" which will bring all medical colleges in the state under its jurisdiction and divest the universities of responsibility for them. If the proposal goes through, an uproar of protest is on the cards.

Police remove hunger strikers

Armed police have removed nine hunger-striking students from the cathedral in Chile's capital, Santiago.

The students had gone without food for nine days in protest at "reforms" carried out by the Government which restrict the subjects which can be studied at the eight state universities, and at the presence of security forces on campuses.

Observers claim that the object of the Government move was to stifle at source possible dissent. The hunger strikers, who were detained by the police, include Mr. Patricia Torres Munoz, president of the social science faculty at one of the state universities until she was expelled because of her political activities.

There is also concern that the Pinochet government is replacing civilian rectors with military personnel — a return to the aftermath of the coup which toppled President Allende.

Post-Giscard autonomy hope

from Guy Neave

PARIS

A greater measure of autonomy is foreseen for universities in France if, as expected, the Left manages to obtain a majority after the second round of the general elections.

This is the message given to university vice chancellors by the Minister of National Education, M. Alain Savary at a press conference last week.

This announcement marks a return to good relations between the minister responsible for higher education and the university world. For, since 1978 the previous minister for higher education, Madame Alice Saunier Silex, refused resolutely to attend any of the vice chancellors' conferences.

In future, M. Savary remarked, the Government would stand by the letter and the spirit of the 1968 guideline law.

The law, passed in the aftermath of the May 1968 uprising, laid down three principles for administering universities: autonomy in the area of academic affairs and teaching; participation by staff and students and interdisciplinary studies. The latter was dismissed as irrelevant by all.

Resignations abound at Pristina

Resignations and expulsions of Yugoslav academics and education officials have become frequent during the last few weeks. The majority have been at the University of Pristina, the focus of more than two months of demonstrations and rioting, which was closed down 10 days early for the summer vacation in the hope of averting more riots.

At the same time the Kosovo province Secretary of Education, Science and Culture, Imer Jaka, and also the vice president of the Kosovo Assembly's executive council, Pjazit Nasi, resigned. The latter specifically acknowledged his "political responsibility" for the situation in education which had made the disturbances possible.

The Communist Party organization in the university set up a special action committee to rectify the situation. Immediate measures have included the expulsion of more than 400 members of the university (largely in the department of philosophy) from the Party, the sacking of 109 professors and lecturers, and the expulsion of 19 students from the university. At least five recipients of "Tito scholarships" have had them withdrawn. A number of longer term "re-education" measures are planned; in particular history students will be discouraged from writing theses on themes with "nationalist" implications. University admissions this year will be cut by 10 per cent.

Dr Pavle Savic, president of the Serbian Academy of Sciences, who formally resigned at the meeting of the academy on May 28, has notified his intention to do so some three weeks previously, following the election of the new academy members. Dr Savic explained that he had been informed early in April by an anonymous letter that one of the candidates had served several years in prison for being a "Communist" (ie for supporting a strongly pro-Soviet line). On checking the accusation and finding it correct, Dr Savic informed the relevant academy officials. Nevertheless, the election went ahead, the "Communist" received the necessary two-thirds "aye" votes in the secret ballot — and Dr Savic decided to resign immediately from the academy meetings. Two of his vice presidents, and the General Secretary of the academy, Dr Milutin Garasanic, also resigned, but agreed to stay in office

Union victory for the Kastel faction

from Benny Morris

JERUSALEM

The right-wing Kastel faction won a controversial victory last week in the Annual Hebrew University Students' Union elections, amid fresh charges of gerrymandering and ballot-stuffing. The elections were boycotted by the major and most minor opposition student factions, who had demanded that the union, controlled by Kastel without interruption since 1975, agree to external supervision of the election process.

Yisrael Katz, incumbent union chairman and Kastel Head, claimed that his faction had received almost 2,200 votes, with another 100-odd votes going to the ultra-nationalist Yesh faction, the campus offshoot of Rabbi Meir Kahane's Kach Movement.

But the opposition factions, who had positioned monitors at each of the 13 polling booths for the duration of the voting, claimed that only 1,575 students had in fact turned up to vote, out of a university student body of 14,500. Of these nearly 12,000 are union members. HU officials who had spot-

checked the voting said they believed the opposition figures were closer to the truth than the official returns, implying some ballot-stuffing or double-voting by union officials and Kastel voters.

In either case, the results are seen as a major defeat for Katz and Kastel, who last year won close to 3,000 votes, while the opposition then amassed some 2,500.

Katz last week claimed the outcome as a victory as the elections this year were low-key, because of the opposition boycott. "Many of our supporters simply saw no reason to turn up," he said.

But both the opposition factions and, unofficially, university officials said they saw the vote as one of no confidence in the union. "The union has no legitimacy, representing at most 13 to 17 per cent of the student body," said Santo Michael, chairman of the Left-wing "Campus" faction.

The results bring a step nearer the setting up of an alternative union by the opposition factions, a move the university authorities will apparently support.

By placing stress on the terms of the 1968 guideline law, M. Savary has in effect nullified his flag and that of his party to the mast. In essence, his policy will be one of totally reversing the main lines which determined university policy over the past seven years. It is in short, a clean break.

In future university autonomy will be reinforced, though this in the immediate short term will be confined to the introduction of different accounting methods and more flexible budgeting devices.

No less important is the minister's insistence that each university shall set out its own teaching development plan — a marked contrast with the rolelessness of central administration that characterized previous policies. Changes are also to be introduced in staff recruitment.

One of the major innovations brought in by the socialists is the emphasis placed upon training for all, and at all levels. Higher education, though no longer endowed with its own minister, is implicitly seen as one of the most significant elements in France's national training system. This change

in perspective is to be reflected in the revival of a system of so-called "association professors."

This title, first introduced after May 1968, was seen as a means of bringing the university closer to working life through the presence of high-powered teachers who had made their way in industry, business and government.

It was, not surprisingly, frowned upon by the more died-in-the-wool "professional academics". Now, as part of the move to create closer links with life outside academia, and to reinforce the training role of higher education, this system of associate appointments is to be disintegrated.

Closer co-ordination between university-based research and that undertaken by the numerous institutes attached to the *Centre National de la Recherche Scientifique* is also a key point in the Government's policy. There are, however, still squabbles inside the cabinet over who precisely shall be the overlord of which research institutes — the Minister of Education or the Minister of Research and Technology, M. Chevenement.

until the end of the year.

This is not the first time that politics has crept into Serbian Academy elections. In autumn 1979, there was a major row after the election of Vladimir Dedjic, president of the Russell Tribunal and Tito's official biographer. Dedjic, who had written the required "maiden speech" on 284 cases of partisan suicides during the Second World War did not turn up to read the speech, on the grounds of illness. No other Academician was willing to read the speech, and the Academy would not bend the rules to allow Dedjic's deputy at the Russell Tribunal, Dr Rudolf Rizman, to do so. The political row generated by the incident raged in the Belgrade press for several weeks.

One of the few leading members of the Academy who did not take an active part in the dispute was Dr Savic.

This makes his resignation, allegedly over an election matter, seem all the more remarkable. Many of his associates, however, have reported his growing dissatisfaction with how the Academy was run. When he took office, at the end of 1971, he openly expressed his intention of bringing new and younger blood into the Academy, and of developing scientific and technological potential, particularly in "modern fields" such as electronics, laser technology and the like. His departure now, some seven months before his term was due to run out, may well be in part a personal protest against the repeated unwillingness of his fellow academicians to support his proposals.

Police hold Wits leaders

from Craig Charney

JOHANNESBURG

Two black student leaders at Witwatersrand University, Mr Azhar Cachalia and Mr Ferroz Cachalia, were detained by security police on Thursday of last week in the wake of an anti-apartheid protest at the university.

The previous day, the president of the white National Union of South African Students, Mr Andrew Borneine, was put into indefinite detention after an initial two-week holding period had expired.

The moves appeared to be part of a crackdown by government on student leaders, trade unionists and others who had participated in nation-wide protests against celebrations of the Republic Day holiday at the end of May.

The Cachalia brothers were picked up at their home in Actonville, outside Johannesburg, shortly after midnight. They are leading figures in the university's black students society, which worked with the Students' Representatives Council to organize protests culminating in flag-burning and confrontations between police and students.

Research stops at geology department

from Lionel Cohen

LEYDEN

The University of Leyden's century-old Department of Geology is expected to close down all teaching and research activities as from September 1982.

Last week's announcement of these closure proposals, and with it the loss of some 30 teaching and research posts came as a grim reminder of the economic realities now being faced by Dutch universities for the first time in decades of post-war expansion. Yet this decision by the administrative board of the university was by no means completely unexpected.

For the past nine years, as part of a national rationalization of teaching resources in this subject, Leyden's sub-faculty of geology and geophysics has had to limit its undergraduate teaching programme mainly to first-year introductory courses and a restricted range of *honours* programmes in stratigraphy and paleontology. For the rest, students have had to commute to Groningen, Utrecht or Amsterdam, and only the last two of these universities now offer complete first degree courses in this subject.

To compensate for this, Leyden's geology department has tended to concentrate its resources more on postgraduate research — a policy materially assisted by the presence in Leyden of the State Geological and Mineralogical Institutes as well as the State Geological Museum.

Now the museum too is under threat of closure when the department shuts, unless a new home and other financial support for its continued operation can be found.

So far the efforts of sub-faculty chairman and head of the geology department, Professor A. Brouwer and his colleagues have been of no avail. Their counter proposal to provide a more comprehensive study programme with the aid of the State Geological Service in Haarlem was unequivocally rejected by the Board of Administration of Leyden University.

A principal reason for that rejection was that the extra staff posts required to service a comprehensive first-degree course structure simply could not be created within the parameters of an already tightly-squeezed university budget. According to *Meester K. J. Cath*, chairman of the Board of Administration, it was a "painful choice", but it was a choice of a kind that had to be made, not only by geology, but also by the entire university community as it simultaneously struggled to achieve global economies in expenditure while also adapting its entire teaching programme to the reformed "two-phase" structure coming into effect in September 1982.

Intake 'set to double'

from Emil Zubryn

MEXICO CITY

Within the next five years the Mexican student population in universities will more than double. That is the claim of assistant minister of Higher and Scientific Research, Eliseo Mendoza Berrueto. He has predicted that by 1986 the present university attendance on university campuses, about 800,000 students, will grow to nearly two million. If it may even exceed this figure, because of the intensified demands for university education by Mexican youth. This may very well tax facilities of present campuses to the limit.

The Government is aware of the problems, and this August the ministry will present a higher education plan for the next decade. This will establish strategies to guarantee sufficient financing, the necessary academic and administrative resources, as well as highly trained specialists in diverse scientific and technological fields.

According to Mendoza Berrueto the main objectives of the plan include: improved academic training of professors; the development of a more equal educational system; concentration on scientific and technological research,

A crisis of our own manufacturing

At a time when spending cuts make it increasingly important for higher education to justify itself in more than purely intellectual terms, its relationship with industry and the economy is being put under the microscope once again. It is a process which has become increasingly common in the last decade as scapegoats have been sought for Britain's industrial decline, but it is one which has always produced more questions than answers.

In the last year a flurry of ministerial pronouncements, a Parliamentary Select Committee report, speeches by industrialists, a variety of conferences and, most recently, the Leverhulme inquiry have all thrown doubt on the extent to which higher education is serving the needs of the economy. Yet it is hardly any clearer now exactly what is required of higher education, let alone how institutions should set about providing it.

It was the so-called Great Debate, which took place under the last Labour government, which set in train the latest phase of detailed assessment of the utilitarian side of higher education. Although there had been long-standing doubts about whether the distribution of students by subject was right for the jobs market, the regional conferences revealed a deep-seated dissatisfaction with the education system on the part of many businessmen and industrialists.

Education was accused of being out of touch with the needs of the economy, reluctant to move with the times and ignorant of the ways of industry. School leavers and graduates, it was said, were given the misleading impression that a career in industry meant a life of drudgery and were encouraged to seek out more glamorous jobs.

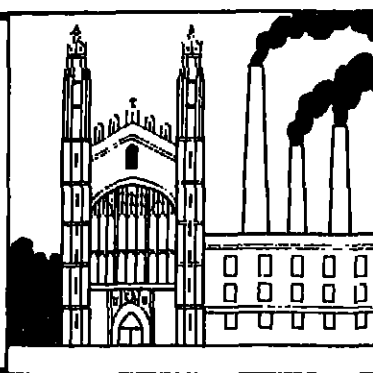
There came the predictable counter-attack that British management was itself responsible for declining prospects in industry and its lack of attraction for young people. It was businessmen and industrialists who were ignorant of what was going on in education and unwilling to involve themselves or their employees in creating closer links. Particularly in the field of continuing education, firms were said to be standing in the way of efforts to produce a better educated workforce.

Although the conferences were sterile, inconclusive affairs, the issues have continued to occupy both sides as well as successive governments.

Only this month, Dr Rhodes Boyson, Under-Secretary for Higher Education, told the Engineering Employers' Federation: "It depresses me that, despite the technological marvels

Businessmen and industrialists are less than happy with the higher education system's appreciation of their recruiting needs. Is Rhodes Boyson right when he claims that our culture overvalues ideas in comparison to productive skills?

In the first article of a series examining this question, John O'Leary unearths an alarming degree of mutual ignorance.



that surround us and the widespread use of the fruits of engineering, misapprehensions about industry should be so prevalent in our society.

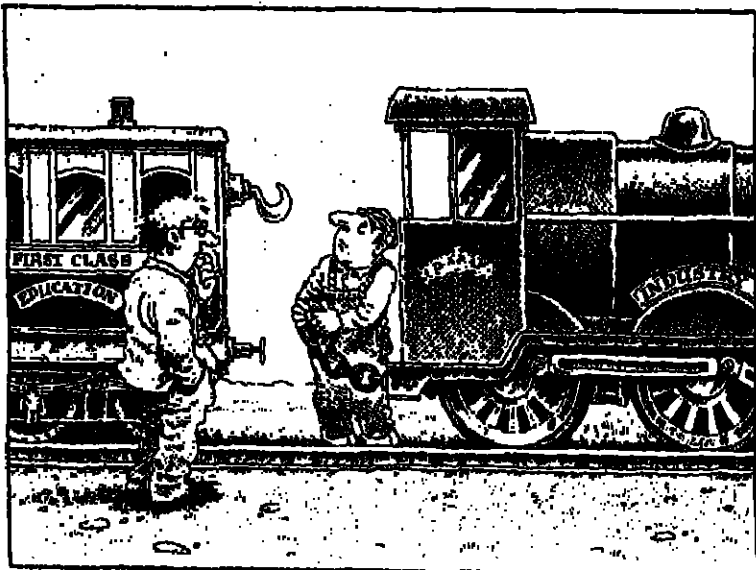
"Our culture has tended to play down the importance of making things and selling them, in comparison with ideas. Co-operation between higher education and industry is not something which arises naturally in our culture as, for example, it appears to do in West Germany, Switzerland and the United States."

Too few teachers in higher education had wide and up-to-date industrial experience, he said, while many firms were unaware of the expertise available in polytechnics and universities, and unwilling to adopt new ideas arising out of research. The Government would encourage co-operation between higher education and industry but could do little unless there was a basic willingness to work together.

Such co-operation undoubtedly exists sporadically throughout higher education; there are numerous examples of institutions of all types working closely with local industry, tailoring courses to specific needs and sharing expertise on research projects. But this has not stemmed the criticism of the type of courses in higher education and of the graduates they produce.

The attacks are usually vague: courses are not sufficiently "relevant", graduates are mostly innumerate, lacking in self-discipline, still not interested in industry or simply not as good as they used to be.

Typical of the genre was a speech last year by Mr Edwin Nixon, chairman of IBM (UK), who told a conference that higher education had ceased to assist the creation of wealth and was still designed to produce a colonial civil service. The system was now run for the educator, not the student, and needed profound changes, most of all in the attitude towards the purpose of education.



The bangs and the whimpers in the wake of the Great Debate

The regional meetings which are the Government's answer to their predecessors' Great Debate have served to underline not only the tensions existing between education and industry but also the conflicting advice which each side has to offer the other.

The 10 conferences primarily concern the schools but discussion has often spilled over into further or higher education and many of the arguments have been universally applicable. So, too, have the attitudes of the participants, often demonstrating suspicion and/or ignorance of the other side.

Last week's penultimate meeting, held in Exeter, reflected the more reserved debating style of the South of England and, perhaps because of the

familiarity of many of the participants with each other, turned out to be one of the most constructive. Yet, despite the absence of slanging matches, education and industry were still divided into two very obvious camps, with the old animosity surfacing on occasions.

The bitterness which saw the series open with a trade union boycott had gone and there was a markedly less political air to the proceedings than in London and further north. Only Mr Jack Evans, of the National Union of Teachers, was prepared to launch a full-blooded attack on the Government, questioning the value of discussions on closer links with industry when so many school leavers were heading

However, under questioning from irate academics, Mr Nixon's thesis was less impressive. His knowledge of developments outside Oxbridge was scanty and he was apparently unaware of the existence of one of the main forums where higher education and industry do meet naturally, despite the membership of an IBM representative.

Such episodes can leave a glow of self-satisfaction among educationists who have just demolished an argument but they seldom answer the fundamental questions. Are the majority of industrialists dissatisfied and are they right to be? Should courses be more vocational or should students be given a broader and less specialized education?

The inconsistency with which the last question is answered is at the root of the frustration felt by many academics who are prepared to adapt themselves and their teaching to current needs. Dr George Brosan, director of North East London Polytechnic, spoke for many at a recent conference when he appealed for guidance on the type of courses to put on, or simply on the type of graduate required by industry.

Did industry want specialists or problem solvers, he asked. Years of dealing directly with industry had left him none the wiser on this point, yet industrialists were still willing to criticize higher education for producing the

wrong product.

As usual, the answer to Dr Brosan's question lies somewhere in the middle. While the specialists produced by vocational courses (not only in the sciences) are required in some of the most crucial areas of the economy, the majority of graduates recruited by industry and commerce are chosen to fill future management positions. The content of their courses is therefore of secondary importance and employers are looking for a variety of personal qualities, not necessarily directly relevant academic achievement.

C and J Clark Ltd., the shoe company, provide a good example. The firm looks for about a dozen graduates per year, of whom perhaps three will be so specialized that only two polytechnics are likely to offer suitable candidates. The remainder should be "high flyers" from any academic area for marketing, and later management, jobs, with a few less academically accomplished graduates being taken on in more mundane positions.

One would think that Clark's requirements would be easy to meet, but this summer, for the third time in five years, the company does not expect to fill all its available vacancies. An inquest is in progress on why it is unable to attract graduates with the academic attainment and personal qualities considered necessary. Yet, at the same time, the company is intend-

The blurred Centre Point of view

The obvious place to go for an assessment of higher education's service to industry and commerce is the Confederation of British Industry. The topic is education and training seen through the eyes of employers, with both sides.

But instead of an answer, Centre Point actually provides conclusive proof that there is no single view of industry's requirements. And, as an umbrella organization with diverse membership, the CBI is not going to risk causing dissent in its own ranks by coming up with potentially controversial judgments.

Officials admit that their position lends itself to somewhat anodyne statements on educational policy, although they point to the value of a clearing house which is able to bring about fruitful co-operation between educationists and business. This is the section's main function on a day-to-day basis, with the emphasis inevitably falling on the schools, rather than higher education.

Rationalization at the CBI means that the relatively modest educational undertaking is to be diluted further through departmental mergers. But it is hoped that a recent increase in activity in the post-school areas will be maintained.

The confederation now has three committees at work in the field: one

dealing almost exclusively with further education and training; a second composed entirely of CBI members dealing with the universities; and a third promoting dialogue between academics and industrialists. This, the most interesting of the organization's ventures in higher education, provides a forum for representatives of the universities and the polytechnics to discuss current issues with CBI members and invited experts. Recent topics have included graduate unemployment and sandwich courses and both discussions have led to action by the confederation.

On a less formal level, the CBI has also arranged talks between Dr Edward Parkes, chairman of the University Grants Committee, and senior industrialists on the academic areas in need of protection in the coming round of cuts. CBI members sit on the UGC, but only in a personal capacity.

Feedback from the membership indicates general satisfaction (or perhaps apathy) with the shape of the higher education system, with some notable exceptions. There is little clamour for places on the education committees, as most CBI members are happy to leave policy discussions to their officials.

As a result, the level of familiarity with developments in higher education seems not to be growing in line with CBI activity. There remains a belief

that degrees validated by the Council for National Academic Awards is non-technical subjects are inferior to those from universities, for example. The majority of CBI members remain too busy or not sufficiently interested to concern themselves with educational issues, even though some eminent figures, such as Lord Carr, are prepared to involve themselves.

The CBI's evidence to the select committee was symptomatic of the uncertainties about policy issues. While ruling out detailed management planning, the confederation's submission called for courses to be "oriented generally towards vocational aims."

Employment considerations should be taken more into account in the provision of courses, the CBI said, but there had to be a balance between educational aims and economic reality. The Government was advised to "pursue a balanced and selective approach" to reconcile all the conflicting pressures and maintain standards.

Such blandness is not a sign of disinterest but of the stifling broadness of the organization. While individuals prepared to speak out about the issues they see in higher education have to be found, there is no simple answer to matching provision between education and the economic needs of the nation.

Chief education officer accused industry of not practising what it preached in its refusal to accept innovations in the realm of examinations and assessment. A second chief education officer issued the familiar reminder that schools and colleges were primarily responsible for giving a rounded preparation for adult life, not simply to serve the needs of industry.

Like the Great Debate, the meetings have thrown up little which is likely to result in radical change, and sceptics regard them as an expensive public relations exercise. Exeter produced general agreement on the value of a broad curriculum with the emphasis on basic skills but little guidance on Lady Young's three themes.

Most of the points made were either unoriginal or were a straightforward restatement of the situation in the South West. Indeed, even Lady Young attached too much priority to "personal qualities of hard work" and a "firmness of the work ethic, rather than any reshaping of the education system."

One businessman ventured the opinion that schools were on the right track, but others appeared much less certain. One industrialist thought it presumptuous to tell the professionals where they were going wrong, the next was positively anxious to do so. The day was a microcosm of relations between education and industry: much good intent, a number of important questions, but little sign of real understanding.

Robin McKie meets Professor John Kingman, the pure mathematician and self-confessed 'wet' Tory who takes over as SERC chairman in September

Breaking with tradition

The appointment of Professor John Kingman as the fifth chairman of the Science and Engineering Research Council marks a departure from a tradition that has seemed, at times, unbreakable. His three immediate predecessors—Sir Geoffrey Allen, Sir Sam Edwards and Lord Flowers—followed paths of marked similarity, from researchers at Manchester, to Imperial College posts (for Allen and Flowers) and eventually to the top position in Britain's research structure.

These three were also noted for their strong beliefs in close university-industry links which have led over the years to a series of special SERC initiatives, such as the council's collaborative awards in science and engineering (CASE), its integrated graduate development scheme and the highly successful teaching companies.

But now they have been succeeded by a pure mathematician who candidly confesses to having no industrial experience at all. "I think that whenever anyone takes on a big job such as the chairmanship of the Science and Engineering Research Council, he is conscious of the gaps in his experience. One of those is my lack of industrial experience and another is that I am not an experimental scientist," said Professor Kingman.

"Correspondingly, I can see the advantages. The great thing about being a mathematician is that the subject gives you entry into every branch of science because mathematics is so pervasive. You know all the language even if you do not know what is being talked about."

Professor Kingman's appointment is also noteworthy because at the age of 41 he is the youngest person to be made chairman of the council. His relative youthfulness obscures an impressive academic pedigree.

Born and raised in London, John Kingman was educated at Christ's College, Finchley, and then studied at Pembroke College, Cambridge, before

embarking on a series of mathematical lecturing posts that led to his appointment as professor of mathematics and statistics at Sussex University at the tender age of 27. In 1969, he was made professor of mathematics at Oxford, where he still teaches, although he has kept his home in Brighton (his wife Valerie teaches history at Sussex).

Professor Kingman has also served as a Conservative councillor in Brighton (he is a Tory of the "wet" variety, he maintains) before beginning his association with the then Science Research Council, firstly by serving on the mathematics committee and then on the science board where he is the present chairman.

This last experience should prove particularly valuable for Professor Kingman in his new role. During his chairmanship of the science board, the council's overcommitment of research funds, combined with tight financial controls imposed by the Treasury, led to the board overspending by almost £3m—which in turn was one of the major reasons for the SERC being hauled before the Public Accounts Committee to explain itself earlier this year.

"Certainly the science board has quite a lot of the general problems which affect the whole of the SERC—although not all of them by any means—so my period there was good grounding for my new role."

The council chairmanship is, he concedes, a fairly terrifying sort of job and one he expects will bring enormous responsibility as well as a great deal of intellectual stimulation. One particular concern is that all research projects and proposals must be selected and investigated no matter what their source.

"Our committees should always be on the look out for the really crazy ideas. The SERC's money is risk capital. The idea is not to keep up basic ground level research, but to be able to invest where you think there will be some degree of real progress."

"We must be able to spot the really good idea even if it comes from someone who does not have an established reputation or even if their ideas look rather odd."

It remains to be seen how well the SERC can support these good ideas during a period when university science departments face unprecedented funding cuts and the council itself will have to munge on the tightest possible budgets.

"In future I don't see us having big facilities which we can regard as being exclusively British. I think all our big science will have to be international."

"There are various ways we can do that. We can do it through the big international organizations like CERN or we can do it by setting up a facility and letting other countries buy into that facility. Not only would we gain financially but we would also get a far more fruitful scientific atmosphere with scientists from other countries researching at our centres."

Professor Kingman particularly welcomed the recent Dutch-UK deal to share costs and operations at the British observatory complex in the Canary Islands. "I think every big facility we have is open to this kind of arrangement and I am certainly hopeful of similar agreements to share costs and work at the SERC's spallation neutron source at Rutherford."

But a far more pressing problem, as far as Professor Kingman is concerned, is the SERC's difficulties in balancing its books within extremely tight Treasury margins. Much of its work involves the support of long term projects that require funds for several years. Yet this has to be achieved on uncertain budgets that still have to be balanced every year to within a margin of 0.15 per cent error.

"This is a very serious problem. We need an easing of the Treasury's guidelines which would allow us to be more cost effective in our planning," argued Professor Kingman.



Professor Kingman—no industrial experience

He warned that because of these strict limits, the council could find itself underspending at times, and therefore not fully carrying out its job to support all possible research. It could also mean that it spread funding for a project over several years, instead of quickly channelling in funds when this would be most economical.

"We need much more flexibility to overspend—or to underspend—by between one or two per cent. If we can persuade Government to give us that, it would be an enormous boon."

On the problems facing the different SERC boards, Professor Kingman highlighted several priority areas. For the science board, the main aim would be to continue funding university and polytechnic research while adequately supporting the major research facilities at the council's Rutherford and Daresbury laboratories. "However, as always, our first priority will be research grants for universities and money for students."

He believed the engineering board would provide "the most interesting challenge" of his new job where it was important that the council continues to "build its bridges with industry." He added: "It is vital that the important

research contributions that we can make are turned into profitable engineering successes."

At the astronomy, space and radio board, it was first important to see established the major observatory to be built in the Canaries, and then to set about the very difficult task of building up a new British scientific space programme, at present considered too costly for the council.

And in nuclear physics, the major area of future SERC involvement would be work by our scientists on the proposed large electron-positron storage ring about which CERN is to make a decision this month.

From September, these concerns will be the most immediate problems in the working life of Professor Kingman when he begins his five-year stint as chairman of the Science and Engineering Research Council. It will involve, he acknowledges, a complete sacrifice of his beloved mathematical and statistics research, for no matter how portable a science mathematics is, the job of SERC chairman allows precious little time for idle rumination.

Just how his term will represent a major break from previous leadership remains, of course, to be seen.

David Jobbins talks to outgoing NELP director Dr George Brosan

Looking back on an eventful decade

North East London Polytechnic has never been far from the headlines in the ten years Dr George Brosan, its director, has been at the helm.

When he leaves the polytechnic to make way for a younger man to navigate the uncharted reefs of public sector higher education, he will turn his hand to a new craft. This time it is a 50-foot motor cruiser which he intends to sail from his newly acquired villa on the Italian coast.

"I am at least a millionaire. With the house in Italy and the motor cruiser I am going to enjoy myself. I like painting and decorating, and between that, mowing the lawn, my various businesses and writing a couple of papers, I am going to have my work cut out."

Dr Brosan has steered a robustly independent course for NELP since it was created by the merger of three local technical colleges in 1970. The polytechnic, which spans three boroughs in a part of the East End where there is a curious mixture of social deprivation and—until the recession—some affluence and conspicuous consumption, quickly became a by-word for academic innovation.

Ideas were quickly spawned, some to be picked up by other institutions, others to wither away. Over the years NELP became a forcing ground for many leading thinkers in public sector higher education, many of whom moved on to apply their philosophies at other polytechnics and colleges.

Among those ideas were Britain's pioneer Diploma of Higher Education and part-time BEd courses, the School for Independent Study and the facility offered to the Lucas Aerospace shop

stewards' committee to set up the centre for alternative technology.

Each in its way sparked off controversy and Dr Brosan was never far from the centre of the storm. But it was the public spending cuts imposed on the three funding boroughs of Barking, Newham and Waltham Forest which focused attention on NELP.

The polytechnic's response to the cuts the authorities insisted it made was a development plan, largely drafted by Dr Brosan, in which the institution concentrated its remaining resources on certain areas, with major cut-backs in the social sciences and arts courses. The outcry at the threat—especially to the applied economics and sociology courses—was immediate, both within the polytechnic and from academics outside.

A combination of academic and trade union pressure, helped by the knowledge that the publicity could seriously damage student recruitment, led to a major revision of the plans.

But the impression still remained that Dr Brosan had adopted the mantle worn by Dr Rhodes Boyson and had become anti-socialism.

It is a charge he emphatically rejects. "I am not against socialism. It is not generally appreciated, for example, that my wife is a sociologist. There is no way I can be prejudiced against it."

He emphasizes the vocational nature of NELP's sociology degree—a general theme he returns to again and again. "The people who leave the sociology course can actually go to do a job," he says. Even the archaeology degree offered by the polytechnic has direct relevance to improving the students' efficiency in the careers of their choice.

"The regional advisory councils have not worked; they are reactive rather than proactive. In 20 years not once has an RAC approached me, suggested we had good facilities for a certain course, and asked us to take it up."

"They react to demands. They do not and cannot foresee because of this



Dr Brosan: "I am at least a millionaire."

It trains curators and assistant curators in techniques which help them handle and preserve museum specimens and artefacts.

Polytechnics have been prevented from doing their intended job, Dr Brosan believes. They have also suffered more harshly from the cuts.

"While the cuts in the polytechnics are real, the cuts in the university system are spurious," he says. Despite the tribulations of the last few years he remains a firm supporter of the polytechnic system, but is saddened that they remain the poor relations of higher education, with inferior facilities. A priority is a change in course approval systems to make adaptation to society's changing needs easier.

"The regional advisory councils have not worked; they are reactive rather than proactive. In 20 years not once has an RAC approached me, suggested we had good facilities for a certain course, and asked us to take it up."

"They react to demands. They do not and cannot foresee because of this

in the system and not out of it."

A brave venture of the early years was to abandon convention and admit students who were likely to benefit rather than likely to succeed. "By and large most departments in the polytechnic still work on the basis of likely to benefit. We have tried but we have not succeeded 100 per cent."

He feels deeply that in areas of social deprivation formal academic qualifications should take second place to other considerations. It was this conviction which appears to have influenced his attitude during the Vyas affair, when he sided with the local authorities as they tried to force one of their employees on to a social work course against the wish of its tutors.

Unapologetic despite the criticism by a High Court judge he shared with chairman of governors Mr Arthur Edwards, he agrees: "It was a very unfortunate incident."

"The staff were wrong and the local authority was right. It was academic bias which kept Mr Vyas out. This is a personal view to which I adhere, but the judge did not agree."

He feels that at the root of the affair was the attempt by a local authority official to do a good turn for an underprivileged member of society.

"Which takes the priority? Social considerations or academic ability? I believe that in the East End social considerations should play an equal if not greater part than formal academic qualifications."

For the future he believes the education system should concentrate on producing people needed for the new industries replacing Britain's traditional "sitting ones."

"Some aspects of science will wither—for example, old-fashioned physics and chemistry. Biotechnology is the future."

His adversaries in the struggle over the past few years are strangely sad that he is to go. Despite the setbacks, Dr Brosan feels his personal "battering average" is acceptable.

"Ninety per cent of the things I have put forward have gone through," he says.



Left to right: Sir Denis Follows; Professor Brian Simon; Fred Jarvis; Jack Straw MP; Sue Slipman; and Trevor Phillips

Paul Flather discovers how NUS leavers have done nicely for themselves in the unions, politics and the media

Whatever happened to old so-and-so?

A new breed of politician is emerging at Westminster. No longer is he or she schooled in the finer arts of rhetoric in the Oxford and Cambridge debating unions.

Instead, they learnt their craft inside the National Union of Students, persuading student unions not to disaffiliate from NUS; fighting for increased representation on university and college bodies; and making deals in the cosying rooms at the back of NUS conferences.

Jack Straw MP for Blackburn - president during the critical period when NUS "went Left and political" following the events of 1968 - is a front bench Opposition spokesman, last week contesting the fine print of the finance bill in a Westminster committee room.

Ian Wrigglesworth MP for Thornaby (vice president 1966-68) and Mike Thomas MP for Newcastle East (executive 1967-68), fresh from running the old Manifesto Group inside the Labour Party, are now described in some quarters as the hidden fifth and sixth men of the Social Democratic Party leadership. Tom McNally (vice president 1966-67) another 1960s contemporary, is Labour MP for Stockton South.

Last week the country was treated to the spectacle of one NUS vice president, Kate Hoey (1970-71), a Hackney councillor, pipping another, Russell Profit (1969-70), a Lewisham councillor, for the parliamentary nomination at Dulwich.

There is little doubt that the 1970s generation of NUS politicians will also be bidding for seats at Westminster, although at present many are working inside trades unions.

But what does being president of NUS really prepare you for? Or, indeed, what was the cut and thrust of 1970s factional NUS politics?

Perhaps the simple answer, as Sue Slipman (president 1977), points out is that "being president of NUS trains you for just one job - being president of NUS. There is no other equivalent position. In fact one of the problems of being president - the person where the buck stops at an incredibly young age - is adjusting afterwards to working at a completely different level."

Most past presidents and executive members agree that the NUS allows people, certainly no older than their mid-twenties, to rub shoulders with experienced civil servants, pouring over statistics and tables, blinking in the glare of the national media spotlight; wading through the Westminster lunch circuit and the diplomatic swampland across Europe and the Iron Curtain. And most appear to have forged the first links of their careers in the hothouse of NUS.

Back in the early 1930s when Sir Denis Follows, chairman of the British Olympic Association, was NUS president (1931-33) the union was more a forum to discuss ideas than a lobby for student interests. Sir Denis quite frankly attributes to NUS the foundations of his lifelong links with sport. "NUS introduced me to international student activity and international affairs which have been my life. I met people from all over the world. I travelled all over the world and all at a very early age."

He remembers well a trip by boat in 1931 to Danzig, to attend a congress of the Confederation Internationale des Etudiants (CIE), and then when he became CIE president another visit to the international student games in 1933. Soon after he became involved with the University Athletics Union,

and went on to become president of FIFA, the international football federation.

By the time Professor Brian Simon, until recently professor at Leicester University became president (1939-40), NUS had undergone its first "radicalization" forced by the economic depression, the Spanish civil war and the impending war. Professor Simon, the first Communist president of NUS, remembers the issues were mainly international, but the great set pieces - the annual congresses - also discussed graduate unemployment; the content and methods of teaching; and representation in universities - familiar enough topics 40 years on. He remembers his year as being "extremely formative, building up many friendships and forcing me to articulate ideas in public."

After the war, NUS began to adopt a higher political profile and establish definite relations with Government ministers.

Fred Jarvis, general secretary of the National Union of Teachers (NUS president, 1951-53) recalls a series of battles for regular consultation with ministers. "We made the breakthrough with David Eccles, when he became education minister."

Jarvis, who stood for parliament in 1951, believes NUS is coming full circle, back to concentrating on education matters after being "deflected" into obscure politics through the 1970s.

Mr Jarvis's first job as press officer for the NUT can be ascribed directly to his media experience through the NUS. "Once inside the NUT I just stayed, and worked hard," he said. The Robbins Report in 1962 merely legitimized the growing confidence of students and the NUS at the start of the higher education boom. By the time Wrigglesworth, Thomas and McNally were on the executive, NUS was becoming more professional in its approach and was an accepted marker on the education landscape.

Wrigglesworth remembers perhaps the first row over overseas student fees, which broke while he was at a festival in Cardiff, and how much he learnt from his dealings with Anthony Crosland, the then education minister. "NUS brought me into contact with all things political, and it gave me an enormous insight into how government works. An invaluable experience for young students."

If the 1960s NUS leader appears to be heading for Westminster, then the 1970s appears, at least for the present, to have opted for union work.

John Randall (president 1971-73) is assistant general secretary of the Civil Service Union; Douglas Henderson (Scottish chairman 1971-72) is a general officer of the General and Municipal Workers Union; Doug Harrison (Scottish chairman 1972-75) is assistant general secretary of the Scottish TUC; Hugh Bailey (executive 1972-73) works for Nalco, the Association of National and Local Government Officers; Digby Jacks (president 1971-73) is an officer for ASTMS, the Association of Scientific, Technical and Managerial Staffs; Pete Ashby (deputy-president 1976-78) works for the TUC industrial relations department; Sue Slipman works for NUPE, the National Union of Public Employees. There are others too; the odd man out is Charles Clarke (president 1975-77), a Hackney councillor, who is advising Neil Kinnock.

All would freely acknowledge their debt to NUS, an insider's view of

British politics, which leaves power lying somewhere between Whitehall, Westminster, trades unions, Fleet Street, and the rest, naturally including Endsleigh Street. Is it perhaps a sign of the times that while the NUS generation of the 1960s opted for Westminster, the 1970s preferred the unions, and the 1980s are heading for the media?

Al Stewart (deputy president 1974-76) is on the ITN industrial team; Anna Soubry (executive 1979-80) is now a news-reader for Grampian TV, and Trevor Phillips (president 1978-80) works for the *Skin* programme at London Weekend Television. Many of the current executive are aiming that way as well.

John Randall, busy on the Civil servants' strike, remembers well the experience he gleaned from opposing Government plans in 1974-75 to exclude student lets from the safety umbrella of the Rent Act. Mike Thomas, raised it in the House: *THE TIMES* made it an issue; and Randall argued the case - and eventually won. Randall said the NUS provided him with a "fund of expertise", but he adds: "Of course you need a fair degree of expertise yourself to get the post and run campaigns that are successful."

Sue Slipman - busy with the ambulance strike, and now after 12 months free of the "Red Sue" tag (she has now joined the SDP) - remembers a different campaign which NUS won, against Government plans to stop students claiming social security in vacations. "You gain a knowledge of what it means to be politically effective, how democracy can work, and how you can actually change things. You learn that you have to create space for people to be able to change," she said, quoting her now well known motto. Hardly the "siren voice" lending British youth astray, as the *Daily Mail* once described her.

Trevor Phillips, modest to a fault, remembers the personal side to his many years in student politics. "I've learnt how to marshal my ideas on the world in a way few senior politicians ever get a chance to do. I also learnt about comradeship, how to remain friends even with those I had bitter political differences with." He rightly points out that much of the real work was done by the full time secretariat in Endsleigh Street, rather than the elected politicians.

Phillips subscribes to the thesis that while NUS presidents are protecting and lobbying for the interests of students they are also "being trained politically." But as he says that does not imply all NUS presidents must enter politics. Phillips himself first tried for a post as a chemist, while Trevor Flake (president 1966-68) joined the personnel department of British Steel and now runs an American company.

"Apart from the 'political training' thesis, which in no way belittles the achievements of NUS presidents while they were president, the NUS has performed one other vital role in British politics. With one foot in the establishment and one foot outside, the NUS has been a conveyor belt for progressive ideas - and also for taking important risks. Which other national organization can claim to have had at its helm in the last four years, a woman, a black and two communists? All did their post proud."

Bringing up the biotech baby...

The recent Spinks Report to the Government on biotechnology was unequivocal: biotechnology is a major growth area, and investment and links between universities, the government and industry are increasingly vital to prevent Britain slipping further down in the race to exploit the science.

But the backing from Government has been minimal, and only a small minority of companies have involved themselves with the subject. It is being left, it seems, to the universities to take the lead.

The universities themselves have no reason to be self-satisfied: applied science has only recently begun to be considered academically acceptable, at a time when it is a key part of every second university in countries such as West Germany.

Strathclyde University has always had a keen interest in applied science. It's former principal, the distinguished nuclear physicist Sir Samuel Curran, termed it "useful research." Strathclyde also has a long history of outreach to industry, and at the end of this month, in collaboration with the Scottish Development Agency, is holding the first briefing for industry in Scotland in biotechnology.

The university stresses that this is not a high-powered scientific conference, but an industrial, educational programme designed to show people with no technical knowledge what commercial applications biotechnology has.

Biotechnology is the application of living organisms, systems or processes to industry. Its products include many foodstuffs, various alcoholic drinks, pharmaceuticals and antibiotics, animal feeds and solvents. It could transform industries such as food processing, agriculture and waste treatment. There is also a rapidly growing market for engineering components and instrumentation used in biotechnology.

So far, the response to the conference has not been as great as expected. Around 70 bodies will be represented: Strathclyde had hoped for perhaps double that.

"Considering the potential in this part of the world, it's disappointing," says Professor John Smith, head of the applied microbiology department, and joint conference organizer with Peter Nelson, Strathclyde's director of continuing education.

"We've still had no response from the banking community. The government has said it's up to the *entrepreneurs* to develop biotechnology, and the *entrepreneurs* are going to be knocking at the banks' doors. Someone should be coming from them to find out what it's all about. I would have expected more people from the local authorities."

The conference will also examine funding for biotechnological ventures. Professor G. Holt, dean of the Central London Polytechnic's school of engineering and science, who has just returned from a year in Brussels, will speak on possible Common Market funding. There will also be representatives of the Scottish Office of the National Research Development Corporation, and the Scottish Development Agency, which gives high priority to developing new industries.

Professor Smith is greatly concerned by the lack of government backing for the technology. "I'm very, very disappointed, and I find it very difficult to understand, because we have so much of a basis of biotechnology in Britain. We've done a great deal of the creative work in substances which contribute to it, but in commercial exploitation, we're lagging behind, particularly behind Germany, Japan and America. France is now pushing into it, and they don't have the wealth of our knowledge."

"It's imperative to keep up with other countries, or they establish and control the markets, and there is no doubt that certain areas of biotechnology will be wealth-generating to a very considerable extent. Rather than prop up failing industries, why do we not encourage new industries?"

Even small concerns of only a few people can benefit from biotechnology, says Professor Smith, although he admits that the potentially enormously

lucrative areas of biotechnology as genetic engineering require venture capital.

People outside the field tend to think that genetic engineering and biotechnology are synonymous. Genetic engineering, which includes research producing the cancer-fighting drug *interferon*, is only a part of biotechnology, albeit an important part, as anything created through it has the scaled up to be of industrial importance.

In fact, I'm getting rather fed up with the word "biotechnology," as Professor Smith. "It covers almost everything, and there's a great tendency to forget parts of its study."

Strathclyde has gained an international reputation principally as a fermentation technique. Biotechnology originally sprang from the traditional arts of brewing, wine making, bread making, and its next major breakthrough was in antibiotics several years ago, when large tank farms were developed, growing organisms in huge quantities.

Supported by the Wolfson Foundation, research at Strathclyde has up with what Professor Smith describes as "A very novel process of producing oriental foods." An ancient method of producing soy bean resulted in, among other things, sauce and a very palatable soy. It is planned to produce these eventually.

One of the biggest promises biotechnology is sewage treatment. Its prime importance is because it is towards pollution control, a job for most industries.

"There's a possibility of net profit from the muck," says Prof. Smith. "This is one of the dirty areas in my own department."

"One young lecturer is working on landfill areas, the big holes in that you put rubbish in. There's organic material that starts to rot and eventually produces methane. It's possible that these sites can generate energy."

There is no doubt biotechnology is wealth generating rather than prop up failing industries, why don't we encourage it?

Within the past month, Strathclyde has announced success in a major project. A team, led by members of Strathclyde's and Glasgow's biochemistry departments, has perfected a method of using research a simple technique of using human monoclonal antibodies.

"These will lead to improved diagnosis and treatment of various diseases, and to major advances in immunology. The team has now begun its procedures and is going to test the process commercially, using the Glasgow multinational unit, Coats Patent."

"This is a shining example of a company which had nothing to do with biotechnology looking around for a new product, and identifying the area worth developing," says Prof. Smith. "We hope that most people go away from this conference with the idea of getting involved with some biotechnology."

Professor Smith remarks that he looks forward with confidence to the universities' troubled years in the types of science done in industry, such as Strathclyde will employ in continuation.

But he has a final warning. "I'm most concerned about the moment we're not able to offer young graduates the right sort of employment. Other countries are going to draw our best young people away - it's the new brain drain."

"Most of the older people who are not true biotechnologists, but who are going to be training graduates who are training in better salaries, and not primarily because of better opportunities and working conditions. And we are going to suffer the due course."

Olga Wolfe
Scottish Correspondent

Steering a new course on the stream of time



In our continuing series on the 'British Disease' Paul Kennedy analyses the choices that confront post-imperial Britain.



proclamation despite the intentions of the present government. Moreover, economic failure - in particular, the absence of the hoped-for industrial stimulus which EEC membership was supposed to produce, as compared with the financial burdens which the Common Agricultural Policy has actually brought - has heightened the debate over Britain's European policy.

Finally, the inability of successive British governments to satisfy the economic expectations of the electorate has exacerbated the domestic political divide, simultaneously strengthening the Conservative "Right" and the Labour "Left" at party level. Yet this polarization, in its turn, threatens to have deleterious effects upon Britain's external policy. Not only would the replacement of one party by the other lead to further "zig-zags" in foreign and defence matters, but - more critically - it seems fair to argue that neither Right or Left have a view of world affairs which sensibly accords with the "stream of time." Neither Mrs Thatcher nor Mr Foot (not to mention

the Monday Club and the Tribune Group) give much indication that they can adjust to the realities of the international scene. In sum, they appear (to this writer, at least) as ill-equipped in that respect as in their respective capacities to handle the country's fundamental economic problems.

But what are those larger world realities, the global "stream of time" upon which British governments must steer "with more or less skill and experience"? There is no space in a brief essay to trace in detail the "trajectory" of this nation's rise and fall as a leading great power; to show, for example, how a concatenation of political, technical and geographical factors operating from the fifteenth century onwards enabled a number of West European states (and Britain especially) to exercise an influence in world affairs out of all proportion to their own population and territorial size; how, due to the intensification of certain economic and technological trends, overseas regions were steadily pulled into a "world-system" of commerce and finance, centred on Europe and above all upon London; and how - eventually - those very same forces of economic growth and technological development began to work against Britain and its Empire.

But it is possible, and necessary, to sketch the latter part of that story and to point to some of the tendencies in recent world politics which increasingly disadvantaged Great Britain, and which made the execution of a successful foreign policy more difficult.

The first and most important of these has undoubtedly been the transfer of industrial technology from its original place of invention to new areas. There is, of course, nothing "modern" about this process; how much did Europe borrow from Arab and Chinese science in the Middle Ages? But the dynamic of technological transfer was given its greatest boost in the early to mid-nineteenth century when the British, abandoning the restrictive practices of the Mercantilist era, exported vast amounts of capital, machinery, engineers and "know-how" to Europe, the USA and further afield. In the short term, the British economy bene-

fited from this role as the "workshop of the world"; in the longer term, it helped to destroy its own lead by creating alternative "workshops," by offering the technology without which the Americans, Russians and others could not develop their own massive hitherto locked potential. What industrialization did was to equalize countries' changes of exploiting their indigenous resources and, over time, to take away some of the early advantages enjoyed by peripheral, maritime-commercial states such as Britain and the Netherlands. And the process continues unabated today, bringing new industries to Brazil, Spain, South Korea, Nigeria, India and many other nations.

The consequences of this for Britain are twofold. In the first place, there is the economic fact that new centres of production have arisen, posing fresh competition to the country's industries. It is almost a century since the first expressions of alarm about German and American industrial rivalry were uttered by British businessmen. Nowadays, they have to heat off - or succumb to - the challenges of Japanese cars, Polish shoes and Asian textiles, and that list is being added to each year. Will such challenges be held? From the historical evidence, the answer must be "no." Given that, to a very large degree, the early British industrial lead was a happy accident, conditioned by geography and certain broad economic trends rather than by native virtues, the only possible way in which that lead could have been preserved against other nations was by working harder and keeping ahead technically - by constant research and training and investment in new ideas and plant. But this did not happen, which leads us back, ineluctably, to the central point of the "British disease", that of relative industrial decline over the past century.

Since the reasons for that failure have been analysed in earlier contributions to this series, they will not be discussed here. But some foreign policy consequences can be pointed to. For a start, it imposes upon the directors of Britain's external affairs a whole array of tricky questions in the field of commercial diplomacy, some of which cut across traditional political considerations. For example, Japan's economic rise, seen from a NATO perspective, can only be welcomed; but that country is, industrially, a fierce and perhaps mortal foe. Can the contradictions here between political, strategic and economic motives be resolved? Can they also be resolved in regard to British policy towards the EEC, towards South Africa, towards OPEC, towards the Third World? To achieve such will require not only favourable occurrences elsewhere (that is, outside British control), but also a present, intelligent and flexible diplomacy on the part of the British Government. And, although Lord Carrington himself commands much confidence, is that degree of sustained competence to be expected from a country in gradual (relative) economic decline and with internal problems which make so many of its population, including its political leaders, insular and introspective?

The consequence of the transfer of technology and productive resources is the creation of new centres of power. Here again, this is an old rather than a new problem for the British. The spread of industrialization was the most important influence upon international politics from the 1850s onwards simply because it altered the global balance in so many ways. Brought by economic growth, states such as the USA, Imperial Germany, Russia and Japan became more powerful, expanding outwards and thereby diminishing Britain's influence in the areas concerned. By the beginning of this century, the "wary Titan" was on the retreat. The new technology, as Mackinder was then arguing, was producing a correlation between the larger geographical and larger historical generalizations; territorial size, economic potential and big battalions - all mattered.

From then until the 1950s, therefore, Britain occupied an increasingly untenable strategic position. While trying to heat off, in two costly wars like the challenges of other great powers like Germany and Japan, it was also attempting to preserve its position in the face of the most important development of all, the rise of the super powers. Not surprisingly, it failed in this attempt; by 1943 Britain was, in some key economic and military re-

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My own interest in arms control, while deep and genuine, is that of a citizen, not an expert. Like so many other citizens, I feel a profound sense of unease at the precarious balance of forces which has, so far, permitted us to avert ultimate catastrophe. And I wonder about just how stable – or how unstable – that balance actually is. Like so many other citizens, I am deeply worried. And I ask myself, "What can be done?"

Obviously we can't simply let matters take their course. Nor is it enough just to hope that by skilful crisis management we can always contrive to pull back from the brink of nuclear war. In addition to our pursuit of mechanisms for the effective control of armaments, aren't there other avenues we should be pursuing with special vigour? And I ask myself what my own institution – the University of California – should be doing, especially in light of its historical role in managing the laboratories at Los Alamos and here at Livermore.

In his famous letter of October 20 1980, Sakharov wrote to the president of the Russian Academy of Sciences that:

"I am convinced that the prevention of thermonuclear war is our most important problem and must take absolute priority over all other issues. The resolution of that problem involves politics, economics, the creation of international trust among open societies, the unconditional observance of fundamental civil and political rights, and disarmament."

In other words, we need to look not only at the terrifying symptoms of our problem – the continuing build-up of nuclear arsenals – but at its underlying causes as well. Those causes are painfully reflected, in the deep divisions we see among the nations of the world, between East and West, between the free world and the Communist world. To pursue only arms control is to concentrate on the symptoms while the disease rages unchecked.

Any catalogue of the causes of the arms race would have to include such questions as the social, economic, and ideological forces that intensify competition; cultural differences and how they alter the equation; the whole ancient, tangled, discouraging complex of circumstances that work against co-operation among nations.

All of these topics demand our attention because they are directly related to our chances for survival into the twenty-first century. They need to be looked at both urgently and carefully, and our knowledge of their implications deepened. It makes no difference that each has been addressed in one way or another and in one forum or another. There is very little evidence, as far as I can see, that they have been considered in, as interrelated and coherent way as they need to be.

And, I would argue, it is from this perspective that the University of California, and other universities as well, have something special to offer.

Universities are superbly suited to the systematic, thorough, and thoughtful examination of hard problems, particularly those problems that demand study over a span of years. The spectacular successes of academic science during World War II established beyond question the capacity

A scholarly solution to the holocaust

David Saxon argues that universities are ideal places to study the underlying causes of the arms' race

ity of research universities to serve the national interest in technical fields. And yet, I doubt that as a nation we have even begun to take advantage of similar capacities of our research universities in other domains. Four years ago I was one of a group of educators from leading private and public universities who issued a joint report on research universities and the national interest. We concluded, among other things, that international studies were a neglected area of higher education and that problem-centered research on important international issues has never received the attention it deserves.

Now, if universities have a contribution to make to our understanding of the complex and inter-connecting causes of the arms race, it will only be by sticking to what they know how to do. Only if they undertake work that incorporates the special skills, talents, characteristics that universities possess.

What this means, in my view, is that universities will make their most important and lasting contributions if they concentrate on the long term issues and problems. Universities are not the places in which to decide this year's issues – the strategic desirability of the MX missile, or whether the government ought to construct such a missile, or whether neutron bombs are or are not useful to the defence of the West. Questions like these demand immediate answers. Similarly, there is little universities can contribute to our national response to such flare-ups as those that occurred this year in Poland, Iran and Syria. Management and fire-fighting, the swift response and counter-response, highly sensitive and classified analyses – these are not tasks universities are cut out to do.

Universities will make their most important and lasting contributions if they concentrate on the long term issues and problems. Universities are not the places in which to decide this year's urgent issues – the strategic desirability of the MX missile, or whether the government ought to construct such a missile. Questions like these demand immediate answers. Similarly, there is little universities can contribute to our national response to such flare-ups as those that occurred this year in Poland, Iran and Syria.

But universities do excel at taking the long view. There is a certain probability – fortunately, quite small – that armed conflict will break out in a given year, statistically speaking. But even if the statistical likelihood of war during a particular 12 month period is small, over time the accumulated probability becomes quite large. The probability per decade or per quarter century, in other words, is far from small.

Anything that can be done to reduce that probability as it accumulates over the decades must be done, for if we find ways to ease international tensions, to reduce whatever forces impel us toward nuclear confrontation, then we have bought the world another 10 or 25 or 50 years in which to seek a lasting solution. Here I am not talking about technical or political breakthroughs, not about crash programmes and spectacular progress; I am talking about the slow, patient, difficult steps that lead to increased understanding, about the possibilities of a gradual evolution in our attitudes, about a slow but steady accumulation of ameliorating elements over these same decades.

I certainly don't intend to give the impression that nothing is being done at the University of California right now to strengthen our understanding of the conditions for international harmony and the control of conflict among nations – quite the contrary. Besides the work being done in the social sciences, in public health, in agriculture – to name a few relevant areas – we also have a number of research centers devoted to the study of broad international questions, among them the Center for International and Strategic Affairs at UCLA and the Institute of International Studies at Berkeley.

What I have begun to explore with our faculty, however, is the possibility of a continuing and more deliberately organized effort within the University of the sort I have just described. I intend this effort to comprise a very broad set of issues, and an equally broad set of activities. As some of you may know, some months ago I appointed a committee to begin thinking and planning for a conference, to be held next year, on various questions relating to international security and arms control. But my intentions are much more ambitious than just to hold a conference, important as that is. I would like to see more of the talent and knowledge available within this university – in politics, in economics, in geography, in history, in whatever disciplines that have a contribution to make – devoted to these long term matters. I have asked the committee to look beyond the conference and to consider just what those issues should be, and just how we should organize ourselves to pursue them.

There are so many questions that need to be answered that the biggest problem may be in deciding where to begin. What are the advantages and disadvantages, for example, of a renewed effort by the United States to foster international cultural and intellectual exchange and to do so, perhaps, on a truly massive scale?

The drastic reduction of defence spending (including, presumably, the Army's presence in Germany), and the possible withdrawal from NATO, would literally "de-stabilize" the entire West European defence system, with such repercussions upon the Netherlands, Denmark and elsewhere that it would be difficult to foresee the consequences – except that they might not be pleasant. Pulling Britain out of the Common Market (with which well over half our trade is now carried out) would also be an act of political nihilism – hiding at our remaining competitive industries and making this overpopulated island again dependent upon distant and very vulnerable supplies of foodstuffs at a time when it is more difficult than ever to forecast the world's future agricultural output. And a general retreat behind tariff barriers would probably make British industry less competitive, would hit at many producers in the Third World, and could well provoke a lengthy tariff war with a country such as Britain – with few bargaining powers – is unlikely to win. Creating in Britain an introspective "socialism in one country" with a siege economy borders on the impossible – unless, of course, the population was reduced to near that before the Industrial Revolution. And, like the policies of the Right, the Left's "solutions" would simply accentuate the nation's domestic-political dissensions.

This claim that there are so many problems, no doubt makes for gloomy reading; but it is not the gloomy task to console or to grasp at straw. An eighteenth century scholar asked to give his views on the decline of Spain would have had to render an equally gloomy account. Again that is not much consolation, especially to those grappling with the dilemmas of current and future British external policy. They have to soldier on, conscious of weaknesses rather than strengths, of setbacks rather than advances. No one aware of the long-term processes of historical development in the past century can envy them their task, and hence it would be short-sighted folly to play down the difficulties.

The tools of the international historian are to be of any help at all in this matter, it will be by offering a cold-blooded analysis of the major influences upon Britain's position in the world and by tracing the evolution of the problems which now confront our rulers. A knowledge of the past is not, admittedly, a guarantee of success in the future; but there is no possibility of evolving a rational, coherent external policy without a knowledge of what has gone before and an understanding of the "stream of time" which carries us along. A recognition of a country's weaknesses enables one to build up its remaining strengths – and there certainly some areas in which Britain is better placed than other second division states. It also enables one to form a better estimate of what can and cannot be done, to avoid the extremes of policy and to devise a sensible, flexible strategy so as to preserve British interests in Europe, in the Third World, and in relation to the super powers.

Whether the Right and the Left – and, indeed, the great mass of the British electorate – will eventually reach that understanding is difficult to say. It would be absurd to suggest that realism and intelligence are altogether spreading more widely to remote, haphazard, affected more by emotion groups blind to the larger tendencies in world affairs, and in consequence creating disappointment among allies and bewilderment among neutrals, as they watch a once dominant nation sliding gently downhill all the way.

The author is president of the University of California. This article is based on an address delivered at a symposium on arms control at Livermore, California.

Are national policies, ours and others', so different that the differences cannot be bridged? Are attitudes so hardened as to be beyond alteration? In the short term, maybe yes – but in the long term, perhaps no. What is the role of social and geographical and economic factors and to what extent are they mutually reinforcing? Is the polemical level of discussion between us and the Soviets too high, too intense or just the reverse? What are the implications for our relationships over the long term?

I don't know enough to know whether these are an entirely different set of questions, should be pursued. I do know that it is important to make a deeply serious effort to do what we can.

History provides examples of how different academic communities responded, or failed to respond, to the grave problems and tensions of the day. Some aggravated, intentionally or not, the conflicts implicit in their society. Others withdrew entirely and left society to its fate. Still others helped in the search for solutions. America's research universities, with their tradition of involvement with society, have overwhelmingly followed this last pattern.

One example of that tradition of public service is the University of California's management of the laboratories at Los Alamos and here at Livermore, whose technical excellence is indispensable to the security of the United States. I intend that we render another and complementary service at the university by exploring the problems and tensions that threaten harmonious relations not only between the United States and the Soviet Union but among nations.

The noted economist, John Kenneth Galbraith, has eloquently summed up our situation: "If we fail in the control of the nuclear arms race, all of the other matters we debate in these days will be without meaning. There will be no question of civil rights, for there will be no one to enjoy them. There will be no problem of urban decay, for our cities will be gone. We will agree that we will tell all of our countries, and of our allies, all human beings, that we will work to have an end to this nuclear horror that now hovers as a cloud over all mankind." I don't believe that ending the arms race and securing international stability are simple problems with simple answers. They are obviously formidable in their difficulty.

But to end with the words of Andrei Sakharov. I am convinced, as he is, that "There is a need to create ideals even when you can't see any route by which to achieve them, because if there are no ideals, then there can be no hope, and then we would be completely in the dark."

In seeking the ideal of a peaceful world we have an important ally within our universities – the power of the open and inquiring intelligence to clarify, to interpret, to illuminate. It has served us well in the past and holds out one of our best hopes for the future.

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Robert Musil and the Crisis of European Culture 1880-1942 by David S. Luft

University of California Press, £11.50 ISBN 0 520 03852 5

by Michael Butler

One of the many paradoxes of twentieth-century German literature is the major role played in its development by authors born not in Germany itself but at the periphery, within the confines of the tottering Austro-Hungarian Empire. Schnitzler, Hofmannsthal, Kraus, Rilke, Kafka, Stefan Zweig, Broch, Roth, Trakl, Werfel, Musil offer ample evidence for Nietzsche's provocative generalization that all great periods of culture are periods of political decline. Indeed, the disintegration of a vast, polyglot empire can rarely have produced a cultural explosion such as that witnessed at the turn of the century in Prague and Vienna.

Artistic breakthroughs were by no means confined to literature. In painting, Klimt and the Vienna Secession led to the startling innovations of Kokoschka and Schiele; in music that city was the crucible for Schoenberg, Webern and Berg; it was there, too, that Freud formulated his immensely influential ideas and Wittgenstein began his drastic redefinition of philosophy. Yet with varying degrees of regret all these men felt the inexorable shift of cultural dynamism northwards – to the more vigorous climate of Berlin.

None recognized this fact more quickly than Robert Musil. Indeed, despite his characteristically Austrian irony, Musil would have rejected the concept of "Austrian Culture" altogether. In his essay, *Buridan's Osterreicher* of 1919, for example, he scorned the "Donauflödel" as a "European Nation Reserve for aristocratic decadence". It was not that specific fate of Austria that concerned him as a mature writer but the wider catastrophe of German and European culture. Austria simply exhibited in perfect miniature the traumas, dishonesties and sense of spiritual crisis that were affecting the whole of Europe. "Kakaniens" the mocking title he gave to the ramshackle Austro-Hungarian Empire in his great, unfinished novel, *The Man Without Qualities*, served merely as a gracefully corrupt and melancholy paradigm of a whole civilization on the brink of collapse.

Despite the early years in the provincial towns of Klagenfurt, Steyr and Brno and his death as an obscure exile in Switzerland, Musil thus saw himself consistently within the central European tradition as a specifically German *Dichter* whose prime function was to describe, admonish and propose new ways forward out of a self-evident cultural exhaustion.

The English discovery and reception of Musil after the Second World War has been bedevilled by two major problems: the lack of translations of the vast majority of his works and the virulent polemics waged over Adolf Frick's wilful editing of *The Man Without Qualities* in 1952. Indeed, it was not until the latter's revised edition of Musil's works was published in 1978 that even the German reader was able to gain an accurate view of that mammoth novel. Given the fact that Musil's posthumous papers contained over 10,000 pages of material, the professional Germanists had food enough for their quarrels, and it is hardly surprising that Musil's true stature has been so hard to establish. With the separate publication of the *Diaries* in 1977 and the new Frisé edition, now soundly based on accepted scholarly principles, the stage is set for a sober assessment of a man who was called – somewhat prematurely – in a famous front-page

article in the *TLS* of October 28, 1949 "the greatest modern novelist in the German language".

Robert Musil's dates match almost uncannily the rise and fall of the Wilhelmine Empire and the Third Reich, and it is the principal merit of Dr Luft's intellectual biography that it underlines at every point the significance of Musil's art and life within the European context. As an historian he has a firm grasp of the tragic process of German hegemony in Europe, and he is able to link it to the development of one of the most intriguing minds of the twentieth century.

Building on his original Harvard doctoral thesis, which covered the period 1880-1924, Luft brings many qualities to the task. He has read widely and critically in European history, philosophy and literature; he possesses authoritatively on physics, mathematics and the social structures essential to an understanding of Musil's professional background and aesthetic theories. His measured analyses make him an ideal exponent of Musil's ideas and enthusiasms.

This biography is the first comprehensive attempt in any language to see Musil's achievement whole. Although the author did not have the benefit of Frisé's excellent new edition, he has worked closely with the unpublished archive material in Klagenfurt, and this has given his arguments a reliable foundation. Frequent and intelligent use is made of Musil's *Diaries*, but Luft does not fall into the trap of assessing the creative work rigidly in terms of biographical data.

To his self-appointed role as representative writer Musil brought impressive qualifications: he knew at first hand the disparate worlds of engineering, mathematics, soldiering, philosophy, experimental psychology, librarianship, journalism, poetry. Gottfried Benn and Alfred Döblin were trained as doctors, Trakl as a pharmacist (an individual who reminds us that a scientific training in itself offers no proof against cultural despair), and none of his contemporaries – with the possible exception of Broch – could match the range and depth of Musil's interests. This unique intellectual and emotional formation, least substance to his acute awareness of the richness of human potentiality and the complexity of human motivation and behaviour.

It also led him to embrace Nietzsche's demand for new cultural and moral values in a world not only bereft of transcendental justification but also marked by a radical loss of confidence in the bourgeois liberal tradition as it had developed in the nineteenth century. If Musil thus shared the Expressionists' hostility to their fathers' age of positivistic materialism, he rejected what he saw as their simplistic moral, political and anti-scientific attitudes. The "New Man", in Musil's view, had to be a much more strenuous, intellectually passionate creature than the sentimental visions of Kaiser, Werfel or Toller.

Luft's delineation of this general European crisis is both sensitive and scholarly. With particular lucid economy he sketches the Austrian contribution to it – the passivity and affected world-weariness, aptly labelled "the gay apocalypse", which characterized the mandarin class in Austria at the turn of the century and which was Musil's principal inheritance.

Against this backdrop Luft sets his discussions of Musil's literary texts, seeing them primarily not in terms of their literary quality, but rather as an "expression of the larger utopian thrust of his thought". His analyses make no claim to originality – which is hardly surprising in view of the vast industry in Musil criticism which has mushroomed in the last two decades. What marks them out, however, are the thoroughness

BOOKS

Prosecuting counsel against his times



Robert Musil in uniform, 1917. He described his military service as "five years of slavery".

with which Luft relates the texts to their social and psychological sources and his refusal to accept dogmatically reductive interpretations of them. Inevitably a number of insights are left tantalizingly undeveloped, but this broad approach has its advantages. For example, it enables the author to examine the novel, *Young Törless*, whose success in 1906 persuaded Musil to dedicate himself to literature, without distorting it to fit the contemporary theories of Freud or Otto Weininger. Nor is the book seen in the over-simplified terms of proto-fascism. Instead Luft brings out the typical ambiguities that Musil's detached treatment of the darker sides of the human psyche produces. In its morally neutral exploration of the irrationality of the world *Young Törless* is shown to occupy a special position in the German tradition of socio-critical *Schulromane*.

After Nietzsche, the second major impact on Musil's intellectual development was undoubtedly Ernst Mach, the physicist, psychologist and philosopher on whom Musil wrote his doctoral thesis in 1908. Mach's attack on the nineteenth-century concept of causality influenced a whole generation of young intellectuals in Vienna at the turn of the century. His argument for the subjective relativity of all psychic and physical phenomena helped to undermine both man's existential security and his sense of moral responsibility. Combined with the Nietzschean view of man as "the creature that is not yet defined", Mach's work gave a crucial impetus to that sense of lost identity which was to become a central theme not only of *The Man Without Qualities* but also of German literature in the twentieth century.

Luft's examination of Musil's critique of Mach's thought clearly reveals the links to the two stories, published in 1911 as *Verdingungen*, which in some ways are as strange as anything Kafka was writing about the same time. In an attempt to relocate the ethical dimension that Mach had seemed to deny, they represent the final stage of Musil's literary apprenticeship and show a complex mixture of *fin de siècle* decadence, the absorption of vitalist and psychoanalytical theories and, more importantly, a desire to break not only with the constrictions of bourgeois morality but also with the aesthetic norms it had created.

In this context it comes as a surprise to find Musil identifying so promptly with the German cause in the First World War. Despite his scientific detachment and often ruthless pursuit of honesty, he lacked at this critical moment the perspective of such men as Heinrich Mann, Kraus or the pacifist editor of *Die Aktion*, Franz Pfemfert, in judging the real issues behind the war. Despite his description of his military service as "five years of slavery", Musil appeared not to have actively disliked his various uniformed roles in the service of the state. Here, too, he was a "representative" intellectual of his day.

The loss of his personal fortune in the inflation and the death of both parents in 1924 gave Musil a directly personal, as opposed to purely intellectual, experience of the vulnerability of the individual in a mass society, which had been recently and cruelly underlined by the indiscriminate slaughter on the Western Front. Consequently, the stories and plays of the immediate postwar period lose nothing of the idiosyncrasy of the earlier work, but in perspective they can be seen as subtle preliminaries to what was to become a life-long obsession: the vast project of *The Man Without Qualities*.

Musil's novel sets out to dissect a society blithely oblivious of its spiritual decay and imminent destruction. Perceiving the discrepancy between technological progress and spiritual emptiness, Musil saw correctly that the urgent task confronting modern man was to re-establish a creative balance between intellect and feeling. By setting his novel in Austria in 1913, one year before Sarajevo, he is able to create with sustained and brilliant irony a moment of artificial stasis in the transition from traditional, individualistic bourgeois society, with its liberal values inherited from the Enlightenment, to the stresses of a modern, pluralistic mass culture. The inevitability of this transition did not produce in Musil the elegiac regret it did, say, in Hofmannsthal, but rather the desire for a thoroughgoing cultural critique that could be used as a foundation for a new mode of living. The destruction of "Kakaniens" is the self-deception – the vital figure of the sex-murderer Moosbrugger lurks beneath the calm surface to remind the reader of the repressive nature of bourgeois society – was a necessary process before the establish-

ment of "the other condition", as Musil rather wilyly termed his quasi-mystical vision of a new social and ethical order where precision of thought and authenticity of feeling would be combined.

Luft devotes one and a half chapters to these and connected matters. He explains the complex evolution of Musil's masterpiece and relates its kaleidoscopic ideas and arguments to contemporary issues and personalities with commendable clarity. The book's insistent message that the world is experienced in the shifting consciousness of the individual ego and not primarily in the statistics of social science or the pluralities of conflicting ideologies emphasizes its continuing relevance.

Ulrich, the hero of *The Man Without Qualities*, is a man in search of a new, multi-dimensional identity who therefore rejects the restrictions of the pseudo "qualities" offered by social roles. The loss of self is perceived paradoxically as a positive experience in overcoming a debilitating self-centredness. Ulrich is presented both as the typical intellectual of his times and, in Musil's words, as "the times' prosecuting counsel against the times." Luft sees the book as Musil's ultimate challenge to the two dominant forms of determinism and reductionism of the nineteenth century: the biological and the social. The novel sums up Musil's own development from a passive acceptance of the overwhelming ambiguity of human affairs to the recognition of the concrete demands of moral responsibility.

This ethical momentum led Musil to the paradoxical attempt to articulate the inarticulable experience of mystical states of mind. It is this dimension that takes the novel far beyond the social criticism of the conventional *Zeitraumroman*. The energy and dedication Musil brought to this task can be detected in his constant struggle with language. Long passages of *The Man Without Qualities* (even at the proof stage – to the despair of his publishers) were worked over again and again in a compulsive desire for ultimate accuracy of expression and feeling. However difficult it may be to follow Musil into such arcane areas of personal perception, few readers can fail to appreciate the rare beauty and tranquility this method achieved in the chapter "Amenage eines Sommerlagers" on which he was still working on the day of his death. Luft argues persuasively that the contemplative nature of these last pages and the jottings towards a "Lay Theology" that Musil made in his last years of exile in Geneva point to a tentative opening to faith in the face of Nazi brutality over the border.

The Man Without Qualities contains in its 1000 pages and the similar number of posthumously published drafts and sketches lengthy sections of philosophical essay-writing. And a major success of Luft's study is the examination of Musil's gifts as an essayist. This facet of his genius – the least known to Anglo-Saxon readers – is a fascinating one. Luft's sympathetic discussion of a number of major essays from the 1920s and 1930s, for example, dispenses of the persistent notion that Musil turned into an apolitical mystic. On the contrary, he pursued his sociopolitical reflections to the end of his life. A contemporary recalls that Musil's lecture *On Stupidity*, delivered in 1937 in Vienna, was the last major lecture to be heard in that city before the *Anschluss* (which ironically Musil had supported in 1919) put an end to such frivolity and Moosbrugger finally came into his own. It was Musil's last public analysis of the political culture of his day. Significantly, two thirds of that last audience was Jewish.

continued on next page

New course up the stream of time

from page 11

speaks, a satellite of the United States. Perhaps the remarkable thing, in retrospect, is how long successive governments kept the overstretched imperial system going before Britain shrank back again to being an offshore European state, as in the days of the first Elizabeth.

But the creation of new centres of power is not merely a thing of the past; it continues apace. Yet very few of this nation's leaders seem to have perceived the long-term significance of such processes as the disintegration of the monolithic Communist bloc, the American economic crises of the 1970s and the even more severe economic weaknesses of the Soviet Union, the revolutionary rise of the power of the OPEC cartel, the pace of Japanese expansion, and the rapid transfer of technology to specific Third World countries; namely, that a decomposition is beginning in the bi-polar world order which has existed since about 1943 and which, despite its many disadvantages for Britain's position then, produced a crude stability in international affairs. The politics of the planet Earth are now altogether more fluid and precarious than they were even in the days of Eisenhower and Macmillan – which is not an encouraging prospect to a country in Britain's present state.

Another awkward tendency, again related to that "unbound Prometheus"

of constant technological innovation and interaction, has been this country's increasing strategic vulnerability. Long gone are the days when it was self-sufficient, isolated from European wars and secure against invasion provided it held the narrow seas. The industrialization of Britain, and the quadrupling of its population in the nineteenth century, made the island state much less defensible. Its economy could no longer be autarchic but was, more than any other's, dependent upon a global trading system, relying heavily upon massive food imports carried across the oceans, which the later inventions of aircraft and submarine made ever more insecure in time of war. Moreover, air power, and then rocketry, meant that the traditional security afforded to an island by the sea had been overwhelmed. Given the capacities of modern weapons, and the vulnerable situation of this small, overpopulated state, it is scarcely surprising that many people wonder if there can be any defence nowadays.

Although no British government has ever accepted – or is likely to accept – that the conclusion and dismantle the country's defences, the commitment to maintain the country's armed services does not bring "security" in the way time. Even if one accepts the argument that Britain can only defend itself under the "umbrella" of NATO, the problems are not resolved: for a country with limited resources is still forced to decide which weapons should be ordered and which interests should be defended. Will it be possible to sustain our "continental commitment", the British Army on the Rhine, and an ocean-going navy, and a substantial Royal Air Force, and an independent nuclear deterrent, the costs for all of which arm shall be cut? If four arms are to be supported, will this not further damage a strained economy?

BOOKS

A poet turning to myth

Canefields

David A. Preston

David A. Preston is senior lecturer in geography at the University of

An exhibition of prints and drawings of Hans Baldung Grien has just closed after visiting the National Gallery of Art in Washington, and the Art Gallery of Yale University. A sixteenth-century German artist, now overshadowed by his more celebrated contemporaries, Baldung experimented with painting, drawing, etching and woodcutting, often producing work that seems to initiate a contradiction that of his contemporary Albrecht Dürer. The Fall of Man reproduced above is taken from the catalogue of the exhibition, edited by James H. Marrow and Alan Shestack, and published by Chicago University Press at £12.00.

Stained glass and reredos

There is a detailed consideration of three authors, Keble, Newman and Isaac Williams. In his discussion of Keble, Professor Tennyson's contention that *The Christian Year*

After these three chapters of individual authors, Professor Tennison picks up a number of tractarian bits and pieces. There is a chapter on *Lyra Innocentium*, "a sort of Christian Year for Teachers and Nurses" holding up an ideal of infant piety calculated to enrage a bit but the most docile Sunday School attendee. There are brief notes on five poets and hymn-writers whose work was tractarian in spirit including John Mason Neale and Edward Caswall, author of the first

J. R. Watson

J. R. Watson is professor of English at the University of Durham.

Andrew Motion

Andrew Motion is lecturer in English at the University of Hull.

The Past and the Present

NB: Raphael Samuel's 'goldmine for both social historians and criminologists' (*Paul Thompson, New Society*) should not be missed.

The Past and the Present

LAWRENCE STONE

Bath: A Social History 1680-1850
or A Valley of Pleasure, yet a Sink of Iniquity
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Routledge & Kegan Paul, 39 Store Street, London WC1

RKP

Michael Butler is senior lecturer in German at the University of Birmingham.

Grappling with a revolutionary

Lenin was an unusually complex man who left behind an ambiguous legacy. He was doctrinaire but not dogmatic, a visionary but not utopian, an avowed Marxist but also aware of Marx's limitations. And although he was deeply concerned to make the Soviet Union a genuinely democratic society, he was responsible for creating a totalitarian apparatus of power.

Within a short span of seven years, Lenin went on successively to replace the masses as the agents of the revolutionary change by the proletariat, the latter by the vanguard, the vanguard by the party, the party by its Central Committee, and the Committee by its specialist organs. When he realized that the specialist organs could be taken over by such a ruthless man as Stalin, he struggled in vain to disown him and pinned his hopes on the *Rabkrin*, a body that resembled the traditional Russian intelligentsia more than Plato's Guardians and was a tightly knit organization of dedicated and allegedly incorruptible men. Lenin's life and work raise several profound and important theoretical questions about the nature of the revolution, the logic of ideology in action, the nature of political realism, the difficulties involved in orienting an essentially Eucarpic body of ideas, and so on. And they also raise historical questions about the role of Lenin in the Bolshevik

only pursued the logical implications of the theory, created a nightmare world of ideology, trapped a nightmarish society in a web of lies, and paved the way for Stalin, Nuliy, and Besanjon's account, which almost totally ignores the Russian history and social and economic circumstances, is as ideological as his Lenin, and *striplike* in the extreme. This book is much more sophisticated. It is scholarly, analytical and full of interesting insights. For Lane, Lenin's genius lay in combining serious sociological analysis with realistic political tactics. Lenin borrowed many of Marx's basic ideas; added several new doctrines of his own, adapted them to the historical circumstances and developed a theoretical analysis of Russian society, which he then generated became the legitimizing and guiding ideology of the Bolshevik revolution. Professor Lane examines Stalin within the framework of his Leninist legacy and the changing social scene. He concludes that although "pathological" and given to "hasty, senseless decision-making", Stalin was a "strong leader".

Bhikhu Parekh

Bhikhu Parekh
Dr Parekh is reader in politics at the University of Hull.

BOOKS

‘Dear Sir, I have bin your servant’

Guides to the galaxies

Gorillas in the wild

Slaveholding in the ancient world

Earth, Ocean, Air, beloved brotherhood

Earth, Ocean, Air, beloved brotherhood

John M. Deag is lecturer in zoology at the University of Edinburgh.

'Beautifully produced, the paperback World's Classics from OUP keep tumbling out of a horn of plenty.' *Punch*

The World's Classics

Out of the horn this summer come tumbling six new World's Classics—*Wuthering Heights*, *Roderick Random*, *The Picture of Dorian Gray*, *Defoe's Roxana*, *Katherine Mansfield's Stories*, and *James Hogg's Private Memoirs and Confessions of a Justified Sinner*. They join the 42 titles already in print—the best of Jane Austen, Henry James, Trollope, Beethoven, Boswell, Dostoevsky, Homer, Conan Doyle, and many more—in reliable texts with introductions by leading writers, at prices from 75p. At your bookshop.

Oxford University Press

BOOKS

Patterns of plant distribution

Biogeography: an ecological and evolutionary approach, third edition by C. Barry Cox and Peter D. Moore. Blackwell Scientific, £7.50. ISBN 0 632 00628 5

Plant Geography, second edition by Martin C. Kellman. Methuen, £10.00 and £4.95. ISBN 0 416 73850 8 and 73860 5

Vegetation of the Earth: and ecological systems of the geo-biosphere, second edition by Heinrich Walter. Springer, DM28.00. ISBN 0 387 98404 2

Vegetation Productivity by Gareth Jones. Longman, £3.95. ISBN 0 582 48577 0

These four books, written for undergraduates at first-year and second-year level in biogeography and ecology, illustrate the catholicity of approach which now characterizes these fields. Three out of the four are new editions of previous works. The appearance of all of them is timely in view of the continued burgeoning of interest in the subject material.

The third edition of Cox and Moore's book on biogeography provides the most holistic coverage, examining plant and animal distributions at both species and community level, and emphasizing functional as well as spatial aspects, the past as well as the present, and evolution as well as ecology. It identifies the three major threads in modern biogeography as being ecological biogeography, or the study of present distributions; the spatial and dynamic analysis of these distributions; and the interpretation of their evolutionary and ecological history.

One of the aims of the book is to link all of these threads, and this has been achieved in a reasonably tidy way. The themes presented are similar to those of previous editions, although much of the material has been considerably updated and rewritten. In particular, the discussion on the changing distribu-

tions of animals and plants through geological time has been extended, along with the exploration of continental drift theory and climatic change. Consideration of the Quaternary has been expanded to a much more satisfactory level so as to embrace patterns of environmental modification on a world scale, although the section on the tropics is still dealt with very sketchily.

The chapter on island biogeography, however, is less pleasing: perhaps the addition of a few extra pages designed to do greater justice to one of the most important subjects of modern biogeography might have added to the student's understanding of it without detracting from the overall balance of the book. The complexities of island environments, for example, are not really treated in any great detail, and neither are their possible effects on island populations.

Some other significant problems are skated over. Competition is taken as read, and the differential consequences to this of r-selection and K-selection are not entered into. The treatment of succession is essentially Clementsian, and not enough is mentioned about recent American views on this complicated phenomenon. As in many other texts written by ecologists, the importance of the concept of evapotranspiration to the study of water limitations in plants is virtually ignored. And in the section on soils, there is a notable bias towards the notion that the predominant movement of water in the A horizon must be downwards, a notion which readers in arid environments will find irritating. But by and large, issues are introduced clearly and satisfactorily throughout the book, and I particularly like the way in which detailed examples are simply presented so as to illustrate ably the sometimes intricate theory. This new edition is, therefore, a fluent exposition of many current biogeographical ideas.

The other three books are all concerned, in their own ways, with matters relating to vegetation, although some references to vegetation-animal relationships are made in passing. The second edition of Martin Kellman's book on plant geography has been substantially

revised and is much broader in scope (and, incidentally, better presented) than the first edition. It deals with three main themes: plant populations, the characteristics of plant environments, and the structure, functioning and patterning of vegetation.

Plant populations are examined from the point of view of the biological and ecological properties of individuals and species; ontogeny, demography and resource allocation; and problems of interference and coexistence. It is particularly pleasing within this section of the book to find that due attention is paid to the sometimes neglected autecological aspects of the discipline, and also to the often equally neglected work of Harper and White in respect of population dynamics. The concepts of r-selection and K-selection are reviewed, and the difficulties of applying these to plant populations are assessed. The role which potential access (or the lack of it) might play in establishing plant distribution patterns forms an especially interesting part of the discussion.

Plant environments are considered in terms of their present features, the ways in which they have changed through time, and the means by which plants have adapted to these changes both on an ecological and evolutionary time scale. A range of views on succession, gradient analysis, classification and ordination is given in the account of vegetation patterning.

Throughout the book, considerable care is taken to define adequately terminology with which both first-year and second-year students may not be familiar. Examples are well integrated into theory, and the theory is up to date (for example, some of Grime's work on plant strategies is included). Indeed, the overall coverage is impressive. Only in a few places is the discussion somewhat curtailed, presumably by limitations of space, and the student will then need to resort to the bibliography in order to gain an adequate understanding of particular items. Thus one might have wished for a more extended discourse on the Braun-Blanquet system of vegetation classification, the intricacies of which are underplayed.

By and large the linkages between chapters proceed logically, but at the end of the book there is a minor organizational schism, in which chapters on, respectively, techniques for the analysis of plant distributions, and the hand of man, are starkly introduced, and dealt with rather generally. The bias of the book is essentially North American, reflecting the author's professional experience, but not overwhelmingly so. The ideas within it as well as the factual information, will ensure its value as an introductory text for some time to come.

In contrast, the second edition of Heinrich Walter's book is disappointing, there being very little additional substantive material from that presented in the first edition. It contains a thorough, descriptive account of the major vegetation types of the Earth, which beginning students should find useful as a reference source. But they may be confused by the adoption of a new terminology which, in my view, hinders rather than aids the clarity of the text.

Jargon apart, the new edition has several other demerits. Although it makes a point of being concerned with the functioning of ecological systems as well as their description, in fact the treatment of the former is confined to very brief comments on energy flow and nutrient movement within particular types of vegetation, and these are unevenly represented, the greatest detail being reserved for mid-latitude types. No attempt is made to modify the descriptive material to include new ideas as to how, for example, vegetation communities and formations relate to each other, change, modify the environment, and in turn are modified by the environment: the expressed views are quintessentially conservative and traditional.

Very few of the references postdate 1975, the date of the first edition. In consequence, concepts dealing with, for example, the C_4 photosynthetic pathway, and its important implications for biogeography, are scarcely mentioned, let alone discussed. On another tack, while the line diagrams, maps and the physiological-climatic data are well chosen, the quality of some of the illustrative photographs is appalling, and will not help the student

to recognize vegetation types. The second edition remains a book which, devoted to standard vegetation description, and the reader should expect too much else from it.

Gareth Jones' volume on vegetation productivity, in the series 'Applied Geography', is the only completely new work of the four, neatly put together, with methods, theory and factual data merged to produce an informative, clearly written and topical text. It aims to establish methods whereby vegetation productivity can be assessed, the various productivity found in different vegetation types, and some applications of this to the resolution of biogeographical and broader problems. Most data are taken from forest sites although some from grassland and agricultural land are also included.

After an introductory chapter deals with the measurement of growth, successive chapters are concerned with the potential productivity of the major world vegetation types, use of this productivity in silviculture, agriculture, and the utilization of land as well as man-made food and methods for assessing food productivity, these largely following a 'build-up' idea, but also considering possibilities of growth-modelling. A separate chapter discusses the relative effectiveness of past techniques, and the calculations of production index, in a case study of Dyfford, Wales.

The last section of the book looks at some ways in which productivity might contribute towards better, more conservative exploitation of the environment and the ecologically efficient production of food crops. It should be noted, however, that the author does not tie himself to any great extent of broader issues of how best to use the population-biological resource equation which is so much a concern of our times.

David W.

David Watts is senior lecturer in geography at the University of Hull, founder-editor of the 'Journal of Biogeography'.

Electrical machines

Electric Machines by G. R. Stemon and A. Straughan. Addison-Wesley, £9.50. ISBN 0 201 97730 2

There are so many books on electrical machines or electromechanical energy conversion that one cannot assert that this is a neglected subject. Still I would recommend this well written, reasonably up-to-date new book as a text for undergraduate courses in electrical machines. This cannot be said for many such textbooks, which read like moderately well-prepared lecture material.

The book could be used as a main text for a core course in electromechanical energy conversion or as a text suitable for mechanical or other engineering students taking courses in which electrical machines is a subsidiary subject. As the main concern of the authors seems to be the basic principles underlying the behaviour of electrical machines, the material could support a number of self-contained courses at various levels of difficulty.

The subject matter is treated in a fairly orthodox manner. The first chapter deals with magnetic systems and gives a good physical insight into ferromagnetism using a simple atomic model. This chapter also contains some details on permanent-magnet materials including the new and important rare-earth magnets. Chapter two is concerned with a fundamental treatment of the transformer and develops on equivalent electrical circuit for this device. Chapter three discusses the basic electromechanical energy conversion process that occurs in all electrical machines. Chapters four to six deal with the more common forms of d.c. and a.c. machines used in industry and are intended to give the reader a good working knowledge of them.

As the authors view all electrical devices as part of an overall system, the main aim of the text is to present models which suitably represent the behaviour of the electrical machine. Equivalent electrical circuits are in the book to model the electrical devices because these are also covered in studies in electronic engineering. Although equivalent electrical circuits are used, the authors rightly point out the limitations of such models, in general terms, the importance of operating the device within the limiting conditions of the model.

The principles underlying the control by solid-state devices are covered in various sections of the book. The information contained in these sections is not sufficient to enable the reader to design motor controllers, but, rather, is intended to give insight into the ways in which control may be obtained using solid-state devices.

Each chapter contains a number of worked examples which aid the development of the text. Furthermore, at the end of each chapter a selection of problems is included for the student to test his grasp of the subject. Answers are given at the back of the book. However, there is no bibliography.

These books will be of most benefit to those students wishing to gain a working knowledge of electrical machines, particularly in regard to understanding the performance of electromechanical devices in an overall system.

K.J. B.

K.J. Blinn is reader in electrical machines at the University of Southampton.

NOTICE BOARD

Chairs

Dr E. J. Thomas has been appointed to the chair in adult education and the directorship of the department of extra-mural studies at the University of Bristol in succession to Professor G. Cunliffe who is retiring. Dr Thomas was formerly senior lecturer in adult education in the University.

Dr P. J. Ucko, formerly principal of the Australian Institute of Aboriginal Studies, Canberra, has been appointed to the chair of archaeology at the University of Southampton, with effect from January 1 1982.

Mr J. Taylor, senior lecturer in surgery at the University of Liverpool and honorary consultant surgeon, Royal Liverpool Hospital and Liverpool Hospital, has been appointed to the chair of surgery at the University of Southampton with effect from July 1 1981.

Dr D. J. G. Bala, senior lecturer in general practice at Aberdeen University has been appointed to the chair of primary medical care at the University of Southampton with effect from October 1 1981.

The title and status of professor of integrated circuit technology at the University of Southampton has been conferred on Mr H. P. Kemmle, senior lecturer in electronics, with effect from July 1 1981.

Dr D. W. Lincoln, presently reader in anatomy has been appointed to a personal chair in anatomy at the University of Bristol with effect from August 1 1981.

The title of Emeritus Professor of Chemistry at the University of London will be conferred on Professor G. R. Martin on his retirement from the University service from October 1 1981.

Recent publications

University of Birmingham and Publications 1979-80 No 51 a report of the progress made in the various fields of research undertaken in the university with details of published work and theses approved for higher degrees during 1979-80. In a foreword to the report the vice-chancellor, Lord Harewood of Newington points out that, although the majority of grants and contracts amounting to £6m was taken up by medicine, science and engineering - the arts-based department continued their 'rich flow of imaginative research' and their own personal efforts to attract funds. (Available from the University of Birmingham, PO Box 363, Birmingham B15 2TT.)

Open University programmes June 20 to June 26

Saturday June 20

- BBC 1 (8.30-9.45 am) Programmes in Wales will be transmitted via BBC Wales.
7.45 Technology foundation course: Return to Base (T101); prog 10.
8.05 Science foundation course: Alcohols Apart (S101); prog 10.
8.30 Science foundation course: 'Why?' (M101); prog 15.
8.45 Making sense of society: The Work of an Adult Pilot (D101); prog 18.
9.20 An algorithmic approach to computing: Linked Lists (A251); prog 6.
9.45 An introduction to psychology: Family Therapy (D251); prog 6.
10.10 Computer-based information systems: How Does a Data Base Management System Work? (M251); prog 9.
10.35 Mathematics foundation course: Relativity Millions (P251); prog 9.
11.00 Art and environment: 'Fragments' Summer School Brighton 1979 (TAD251); prog 9.
11.25 Open Forum - 67. Preparing for Summer School (A251); prog 9.
11.50 Telecommunication systems: Telephone Switching 2 (T351); prog 9.
12.15 The early Roman Empire: Work and society (A251); prog 9.
12.40 Decision making in Britain: Government and industry: Upper Clyde Shipbuilders (D203); prog 9.
1.05 Physiology of cells and organisms: Regulation and Embryonic Environment: The Placenta (S351); prog 9.
1.30 Biochemistry and molecular biology: Oxidative phosphorylation 2 (S321); prog 9.
RADIO 3 (VHF)
8.25 The control of education in Britain: Design: Effects on Control (D251); prog 9.
8.45 Curriculum design and development: Creative Issues in Teacher Education (E203); prog 9.
8.55 Patterns of inequality: Eastern Europe: Power and the Party (D302); prog 9.
8.55 Patterns of inequality: Eastern Europe: Power and the Party (D302); prog 9.
9.15 Personal and learning: Creativity and the Work of an Adult Pilot (D201); prog 18.
9.25 Solid, liquid and gas: Two ways of modelling Solids (P251); prog 3.
9.35 Through and across: Two ways of modelling Solids (P251); prog 3.
9.45 The early Roman Empire: Work and society (A251); prog 9.
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Universities

CHAIR OF MUSIC
(1764)

The Chair of Music at Trinity College, Dublin, will fall vacant on 1st October, 1982, following the retirement of the present occupant, Professor Brian Boydell.

Further particulars relating to this appointment may be obtained from:

G. H. H. Giltrap, Secretary,
Trinity College, Dublin 2

to whom enquiries should be directed preferably by 30th June, 1981.

Telephone enquiries may be made to: Dublin 772941, Exs. 1123.
SECOND NOTICE

The University of
AdelaideCHAIR OF ORAL
PATHOLOGY AND ORAL
SURGERY

The University is seeking an outstanding person, with appropriate qualifications and clinical experience either in oral pathology or in oral surgery, to provide academic leadership in the teaching and research activities of the Department. A clinical qualification registrable in South Australia is essential.

The Department of Oral Pathology and Oral Surgery is located within the Dental School of the University of Adelaide which is situated in the Gardens, Department of the Royal Adelaide Hospital.

Salary: £44,500 per annum with provision for superannuation, in addition to the basic salary the Professor will receive, on account of a registrable dental qualification, a clinical leading at the rate of £42,500 per annum.

Further information, including the formal terms and conditions of appointment, is available from the Departmental Secretary and details relating to the provisions of the Department of Oral Pathology and Oral Surgery are available from the Registrar of the University or the Secretary General, Association of Commonwealth Universities (40, 30 Gordon Square, London WC1H 0PF).

Applications, including a curriculum vitae and a statement of research interests, should be sent to the Registrar of the University, P.O. Box 488, Adelaide, South Australia 5001, not later than 18 September 1981.

UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

SENIOR LECTURER/
LECTURER

in Chemistry

Applicants should have a special interest in Physical Chemistry.

Salary scales: Senior Lecturer: £20,500-24,000 p.a. Lecturer: £16,500-19,500 p.a. (11 months) + £2,500 p.a. for housing allowance. Family passages, Study and Travel Grant.

Applicants should submit a curriculum vitae (2 copies), including a curriculum vitae and naming three referees, should be sent as soon as possible to the Campus Secretary, University of the West Indies, P.O. Box 64, Bridgetown, Barbados. Applicants resident in the UK should send one copy to the Committee for International Cooperation in Higher Education, The British Council, Higher Education Division, 30, 30 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

The Chinese University
of Hong Kong

FACULTY OF MEDICINE

SENIOR LECTURESHIP/
LECTURESHIP IN SURGERY

This newly established medical school, with an annual student intake of 100, seeks to appoint a number of lecturers and senior lecturers in various fields of surgery, including Neurosurgery and Paediatric Surgery. The successful candidate will be expected to assume duties in September 1982 or as soon as possible.

Qualifications: Applicants should possess a medical qualification registrable in Hong Kong, and have at least five years' postgraduate clinical experience in the field of surgery, and higher qualifications, with experience in undergraduate teaching and research.

Remuneration: Senior Lecturer: HK\$200,000 per annum. Lecturer: HK\$150,000 per annum. HK\$100,000 per annum for a Lecturer with a registrable dental qualification, a clinical leading at the rate of HK\$40,000 per annum.

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MIDDLESEX
PROFESSOR AND DIRECTOR,
BRUNEL UNIVERSITY

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LECTURER

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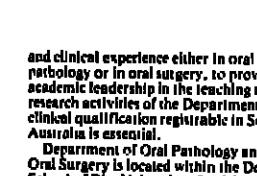
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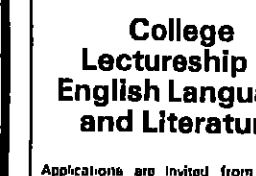
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Applicants should submit a curriculum vitae (2 copies), including a curriculum vitae and naming three referees, should be sent as soon as possible to the Campus Secretary, University of the West Indies, P.O. Box 64, Bridgetown, Barbados. Applicants resident in the UK should send one copy to the Committee for International Cooperation in Higher Education, The British Council, Higher Education Division, 30, 30 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

CHAIR OF MUSIC
(1764)

The Chair of Music at Trinity College, Dublin, will fall vacant on 1st October, 1982, following the retirement of the present occupant, Professor Brian Boydell.

Further particulars relating to this appointment may be obtained from:

G. H. H. Giltrap, Secretary,
Trinity College, Dublin 2

to whom enquiries should be directed preferably by 30th June, 1981.

Telephone enquiries may be made to: Dublin 772941, Exs. 1123.
SECOND NOTICE

The University of
AdelaideCHAIR OF ORAL
PATHOLOGY AND ORAL
SURGERY

The University is seeking an outstanding person, with appropriate qualifications and clinical experience either in oral pathology or in oral surgery, to provide academic leadership in the teaching and research activities of the Department. A clinical qualification registrable in South Australia is essential.

The Department of Oral Pathology and Oral Surgery is located within the Dental School of the University of Adelaide which is situated in the Gardens, Department of the Royal Adelaide Hospital.

Salary: £44,500 per annum with provision for superannuation, in addition to the basic salary the Professor will receive, on account of a registrable dental qualification, a clinical leading at the rate of £42,500 per annum.

Further information, including the formal terms and conditions of appointment, is available from the Departmental Secretary and details relating to the provisions of the Department of Oral Pathology and Oral Surgery are available from the Registrar of the University or the Secretary General, Association of Commonwealth Universities (40, 30 Gordon Square, London WC1H 0PF).

Applications, including a curriculum vitae and a statement of research interests, should be sent to the Registrar of the University, P.O. Box 488, Adelaide, South Australia 5001, not later than 18 September 1981.

UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

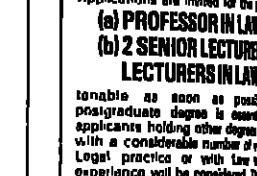
SENIOR LECTURER/
LECTURER

in Chemistry

Applicants should have a special interest in Physical Chemistry.

Salary scales: Senior Lecturer: £20,500-24,000 p.a. Lecturer: £16,500-19,500 p.a. (11 months) + £2,500 p.a. for housing allowance. Family passages, Study and Travel Grant.

Applicants should submit a curriculum vitae (2 copies), including a curriculum vitae and naming three referees, should be sent as soon as possible to the Campus Secretary, University of the West Indies, P.O. Box 64, Bridgetown, Barbados. Applicants resident in the UK should send one copy to the Committee for International Cooperation in Higher Education, The British Council, Higher Education Division, 30, 30 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

CHAIR OF MUSIC
(1764)

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Telephone enquiries may be made to: Dublin 772941, Exs. 1123.
SECOND NOTICE

The University of
AdelaideCHAIR OF ORAL
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SURGERY

The University is seeking an outstanding person, with appropriate qualifications and clinical experience either in oral pathology or in oral surgery, to provide academic leadership in the teaching and research activities of the Department. A clinical qualification registrable in South Australia is essential.

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Applications, including a curriculum vitae and a statement of research interests, should be sent to the Registrar of the University, P.O. Box 488, Adelaide, South Australia 5001, not later than 18 September 1981.

UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

SENIOR LECTURER/
LECTURER

in Chemistry

Applicants should have a special interest in Physical Chemistry.

Salary scales: Senior Lecturer: £20,500-24,000 p.a. Lecturer: £16,500-19,500 p.a. (11 months) + £2,500 p.a. for housing allowance. Family passages, Study and Travel Grant.

Applicants should submit a curriculum vitae (2 copies), including a curriculum vitae and naming three referees, should be sent as soon as possible to the Campus Secretary, University of the West Indies, P.O. Box 64, Bridgetown, Barbados. Applicants resident in the UK should send one copy to the Committee for International Cooperation in Higher Education, The British Council, Higher Education Division, 30, 30 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

Universities continued

THE PAPUA NEW GUINEA
UNIVERSITY OF TECHNOLOGY
DEPARTMENT OF CHEMICAL TECHNOLOGYLECTURER IN
FOOD TECHNOLOGY 1/2

Amended text

Applications are invited for the above-mentioned academic position by the Department of Chemical Technology which conducts a five year degree course in Food Technology.

Applicants should be suitably qualified food technologists with appropriate industrial and/or academic experience. Preference will be given to applicants with a background in food processing.

Salary range: Lecturer 1 - £12,400; Lecturer 2 - £13,700. K1 - £14,700 (as at 15 May 1981). The initial contract will be for 3 years. Other benefits include a gratuity of 24% based on 2% of appointment and superannuation for the staff member and family after 10 months of service, retiring in and out of service, six weeks' paid leave per year, education fees and assistance towards school fees, free housing, salary continuation and medical benefits are available.

Detailed applications with curriculum vitae, together with the names and addresses of three referees, should be received by the Registrar, Papua New Guinea University of Technology, P.O. Box 783, Port Moresby, Papua New Guinea, not later than 15 July 1981.

Applicants resident in the UK should also send one copy to the Association of Commonwealth Universities (Apsu), 30 Gordon Square, London WC1H 0PF.

ST. JOHN'S COLLEGE
OxfordCollege
Lectureship in
English Language
and Literature

Applications are invited for a suitably qualified person to provide academic leadership in the teaching and research activities of the Department. A clinical qualification registrable in South Australia is essential.

The Department of Oral Pathology and Oral Surgery is located within the Dental School of the University of Adelaide which is situated in the Gardens, Department of the Royal Adelaide Hospital.

Salary: £44,500 per annum with provision for superannuation, in addition to the basic salary the Professor will receive, on account of a registrable dental qualification, a clinical leading at the rate of £42,500 per annum.

Further information, including the formal terms and conditions of appointment, is available from the Departmental Secretary and details relating to the provisions of the Department of Oral Pathology and Oral Surgery are available from the Registrar of the University or the Secretary General, Association of Commonwealth Universities (40, 30 Gordon Square, London WC1H 0PF).

Applications, including a curriculum vitae and a statement of research interests, should be sent to the Registrar of the University, P.O. Box 488, Adelaide, South Australia 5001, not later than 18 September 1981.

UNIVERSITY COLLEGE
BOWENPROFESSOR IN LAW
(a) SENIOR LECTURER
(b) SENIOR LECTURER
LECTURES IN LAW

Applications are invited for the post of:

PROFESSOR IN LAW
(a) SENIOR LECTURER
(b) SENIOR LECTURER
LECTURES IN LAW

Applicants should be suitably qualified persons with appropriate qualifications and experience in the field of law.

Salary range: Lecturer 1 - £12,400; Lecturer 2 - £13,700. K1 - £14,700 (as at 15 May 1981). The initial contract will be for 3 years. Other benefits include a gratuity of 24% based on 2% of appointment and superannuation for the staff member and family after 10 months of service, retiring in and out of service, six weeks' paid leave per year, education fees and assistance towards school fees, free housing, salary continuation and medical benefits are available.

Detailed applications with curriculum vitae, together with the names and addresses of three referees, should be received by the Registrar, Papua New Guinea University of Technology, P.O. Box 783, Port Moresby, Papua New Guinea, not later than 15 July 1981.

Applicants resident in the UK should also send one copy to the Association of Commonwealth Universities (Apsu), 30 Gordon Square, London WC1H 0PF.

UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

SENIOR LECTURER/
LECTURER

in Chemistry

Applicants should have a special interest in Physical Chemistry.

Salary scales: Senior Lecturer: £20,500-24,000 p.a. Lecturer: £16,500-19,500 p.a. (11 months) + £2,500 p.a. for housing allowance. Family passages, Study and Travel Grant.

Applicants should submit a curriculum vitae (2 copies), including a curriculum vitae and naming three referees, should be sent as soon as possible to the Campus Secretary, University of the West Indies, P.O. Box 64, Bridgetown, Barbados. Applicants resident in the UK should send one copy to the Committee for International Cooperation in Higher Education, The British Council, Higher Education Division, 30, 30 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

The Australian
National University
VICE-CHANCELLOR

The Vice-Chancellor of the Australian National University will become vacant on 12 May 1982 following completion of Professor D. A. Low's seven year term of appointment.

The Chancellor, Emeritus Professor Sir John Crawford, invites men or women with appropriate experience and qualifications to write to him, indicating interest, at Post Office Box 184, Canberra City, A.C.T. 2601, Australia. He would also welcome suggestions as to names which might be considered. All enquiries and suggestions will be treated in confidence.

G. E. Dicker, Registrar.

OXFORD
UNIVERSITY OF
GRINELL LECTURESHIP IN
THE SCIENCE OF
LITERATURE

Applications are invited for the above-mentioned academic position by the Department of English Literature which conducts a five year degree course in English Literature.

Applicants should be suitably qualified persons with appropriate qualifications and experience in the field of English Literature.

Salary range: Lecturer 1 - £12,400; Lecturer 2 - £13,700. K1 - £14,700 (as at 15 May 1981). The initial contract will be for 3 years. Other benefits include a gratuity of 24% based on 2% of appointment and superannuation for the staff member and family after 10 months of service, retiring in and out of service, six weeks' paid leave per year, education fees and assistance towards school fees, free housing, salary continuation and medical benefits are available.

Detailed applications with curriculum vitae, together with the names and addresses of three referees, should be received by the Registrar, Papua New Guinea University of Technology, P.O. Box 783, Port Moresby, Papua New Guinea, not later than 15 July 1981.

Applicants resident in the UK should also send one copy to the Association of Commonwealth Universities (Apsu), 30 Gordon Square, London WC1H 0PF.

UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

SENIOR LECTURER/
LECTURER

in Chemistry

Applicants should have a special interest in Physical Chemistry.

Salary scales: Senior Lecturer: £20,500-24,000 p.a. Lecturer: £16,500-19,500 p.a. (11 months) + £2,500 p.a. for housing allowance. Family passages, Study and Travel Grant.

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UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

SENIOR LECTURER/
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in Chemistry

Applicants should have a special interest in Physical Chemistry.

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Southampton
UNIVERSITY OF
TEMPORARY LECTURESHIP
IN WEST AFRICAN
POLITICS

Applications are invited for the post of Temporary Lecturer in West African Politics by the Department of Politics and International Studies. Candidates should have a PhD degree and be qualified to teach at the university level. The post is for one year from 1st September 1981, at a salary of £12,400 per annum. The successful candidate will be expected to teach and supervise students in the Department of Politics and International Studies. Further particulars may be obtained from the Registrar, University of Southampton, Southampton SO9 5NH.

OXFORD
UNIVERSITY OF
GRINELL LECTURESHIP IN
THE SCIENCE OF
LITERATURE

Applications are invited for the above-mentioned academic position by the Department of English Literature which conducts a five year degree course in English Literature.

Applicants should be suitably qualified persons with appropriate qualifications and experience in the field of English Literature.

Salary range: Lecturer 1 - £12,400; Lecturer 2 - £13,700. K1 - £14,700 (as at 15 May 1981). The initial contract will be for 3 years. Other benefits include a gratuity of 24% based on 2% of appointment and superannuation for the staff member and family after 10 months of service, retiring in and out of service, six weeks' paid leave per year, education fees and assistance towards school fees, free housing, salary continuation and medical benefits are available.

Detailed applications with curriculum vitae, together with the names and addresses of three referees, should be received by the Registrar, Papua New Guinea University of Technology, P.O. Box 783, Port Moresby, Papua New Guinea, not later than 15 July 1981.

Applicants resident in the UK should also send one copy to the Association of Commonwealth Universities (Apsu), 30 Gordon Square, London WC1H 0PF.

UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

SENIOR LECTURER/
LECTURER

in Chemistry

Applicants should have a special interest in Physical Chemistry.

Salary scales: Senior Lecturer: £20,500-24,000 p.a. Lecturer: £16,500-19,500 p.a. (11 months) + £2,500 p.a. for housing allowance. Family passages, Study and Travel Grant.

Applicants should submit a curriculum vitae (2 copies), including a curriculum vitae and naming three referees, should be sent as soon as possible to the Campus Secretary, University of the West Indies, P.O. Box 64, Bridgetown, Barbados. Applicants resident in the UK should send one copy to the Committee for International Cooperation in Higher Education, The British Council, Higher Education Division, 30, 30 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

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LECTURER

Applications are invited for the post of:

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LECTURER

in Chemistry

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LIVERPOOL
UNIVERSITY OF
TEMPORARY LECTURESHIP
IN WEST AFRICAN
POLITICS

Applications are invited for the post of Temporary Lecturer in West African Politics by the Department of Politics and International Studies. Candidates should have a PhD degree and be qualified to teach at the university level. The post is for one year from 1st September 1981, at a salary of £12,400 per annum. The successful candidate will be expected to teach and supervise students in the Department of Politics and International Studies. Further particulars may be obtained from the Registrar, University of Liverpool, Liverpool L69 3GB.

OXFORD
UNIVERSITY OF
GRINELL LECTURESHIP IN
THE SCIENCE OF
LITERATURE

Applications are invited for the above-mentioned academic position by the Department of English Literature which conducts a five year degree course in English Literature.

Applicants should be suitably qualified persons with appropriate qualifications and experience in the field of English Literature.

Salary range: Lecturer 1 - £12,400; Lecturer 2 - £13,700. K1 - £14,700 (as at 15 May 1981). The initial contract will be for 3 years. Other benefits include a gratuity of 24% based on 2% of appointment and superannuation for the staff member and family after 10 months of service, retiring in and out of service, six weeks' paid leave per year, education fees and assistance towards school fees, free housing, salary continuation and medical benefits are available.

Detailed applications with curriculum vitae, together with the names and addresses of three referees, should be received by the Registrar, Papua New Guinea University of Technology, P.O. Box 783, Port Moresby, Papua New Guinea, not later than 15 July 1981.

Applicants resident in the UK should also send one copy to the Association of Commonwealth Universities (Apsu), 30 Gordon Square, London WC1H 0PF.

UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

SENIOR LECTURER/
LECTURER

in Chemistry

Applicants should have a special interest in Physical Chemistry.

Salary scales: Senior Lecturer: £20,500-24,000 p.a. Lecturer: £16,500-19,500 p.a. (11 months) + £2,500 p.a. for housing allowance. Family passages, Study and Travel Grant.

Applicants should submit a curriculum vitae (2 copies), including a curriculum vitae and naming three referees, should be sent as soon as possible to the Campus Secretary, University of the West Indies, P.O. Box 64, Bridgetown, Barbados. Applicants resident in the UK should send one copy to the Committee for International Cooperation in Higher Education, The British Council, Higher Education Division, 30, 30 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF THE
WEST INDIES - BARBADOSSENIOR LECTURER/
LECTURER

Applications are invited for the post of:

SENIOR LECTURER/
LECTURER

in Chemistry

Applicants should have a special interest in Physical Chemistry.

General Vacancies

Software Lecturer

Today's civil and military aircraft rely upon avionics - electronics systems that navigate, monitor flight performance, and permit complex missions. These systems involve complex and powerful computer software made possible only by ensuring that the skills of the software engineer keep pace with the rapid advances taking place in this field.

As Europe's premier avionics company, we ensure that our software engineers are well able to meet this challenge by running our own software training school. We now wish to appoint an additional Software Lecturer to its staff. The man or woman appointed will be involved in all aspects of the preparation and delivery of instructional courses covering a wide range of subjects, from design techniques and programming

standards to user languages and microprocessor applications.

For this reason, considerable practical knowledge, preferably gained within an industrial environment, is prerequisite and previous teaching or lecturing experience would be an advantage.

The person appointed may expect a highly competitive salary plus a range of other benefits which will include relocation expenses where appropriate and, under certain circumstances, assistance with local authority housing.

Please send a comprehensive c.v. to Tony Elliott, or telephone him on 01-953 2030 extn 1449 (or 01-207 3455 day or night) for further details, quoting ref. no. MA/80/57. Marconi Avionics Limited, Elstree Way, Borehamwood, Herts. WD6 1BR.

MARCONI AVIONICS
A GEC-Marconi Electronics Company

HVAC Expertise? Training Experience?

Pass it on

to our own staff and our customers when you join Landis & Gyr. Your background, will be a combination of HVAC engineering and the presentation of technical courses. The post is a new one and will probably involve your responsibilities and your experience as you have taught in our own technical staff, and to our customers, on the range and applications of our HVAC controls and their theoretical aspects. You will be encouraged to play a leading role in planning and creating training aids, methods and schedules.

While you will be based at our Head Office in Acton, some of our courses are held at Landis & Gyr Area Offices throughout the country. Therefore you can expect to travel within this country and also occasionally Europe.

The salary and benefits package is attractive.

For more information about this opportunity, please contact Frances Simpkins, Landis & Gyr Ltd., Victoria Road, North Acton, London W3 6XS. Telephone: 01-952 5311 Ext. 3389.

THES15

Overseas

Educational Posts Overseas.

EGYPT

ELT Adviser
El-Zawila El-Hamra Technical
Teacher Training School, Cairo.

Reference: 81 K 28

The job: To develop a 5-year technical syllabus, comprising a 3-year general English followed by 2-year ESP reading skills course for this newly established institution. The job will involve adaptation of existing materials written for a similar institution in Egypt; provision of materials for the schools specific needs; training ELT staff to use the materials; selection/editing of ESP textbooks; outward dissemination of the materials to Kubba and Dar al-Salam Technical Schools. Seminar training for ELT staff in these three schools;

provision of additional ELT training for technical teachers due to study at Oldham Technical College, Lancashire and general teaching duties for up to 18 hours per week. Qualifications: Degree, MA in Applied Linguistics or a 1-year postgraduate Diploma in TEFL plus 5 years experience including ESP materials writing and teacher training. Candidates, preferably male, aged 30-50, must be UK citizens with a British educational background. Salary: £8887-£10,717 p.a. Benefits: Salary and allowances free of UK income tax; variable overseas allowance according to marital status and salary level; free family passages; children's educational allowance and holiday visits; free furnished accommodation; outfit allowance; medical scheme; baggage allowance; paid leave. Contract: 2 years initially with the British Council.

Key English Language Teaching Scheme

The KELT Scheme is part of Britain's programme of aid to developing countries under which ELT specialists serve in Key posts in 40 countries.

ZAMBIA

Adviser in Primary English
Curriculum Development Centre
Education Services Centre
Lusaka

Reference: 81 K 30

The job: To evaluate and revise the Zambian Primary Course English component and develop new instructional material for the

revised course in accordance with the recommendations of the Zambian Education Reform document. Qualifications: Candidates, preferably aged 35-50, must be UK citizens with a British Educational background. They should have a first degree, preferably in English or a Foreign Language, plus an MA in Applied Linguistics or a one-year University Diploma in TEFL. 5 years TESOL/TEFL experience overseas including African and some at Primary level. Salary: £11,128-£13,827 p.a. Benefits: Salary and allowances free of UK income tax; variable overseas allowances according to marital status and salary level; free family passages; children's educational allowance and holiday visits; free furnished accommodation; outfit allowance; medical scheme; baggage allowance; paid leave. Contract: 2 years initially with the British Council.

Please write briefly stating qualifications and length of appropriate experience, quoting relevant reference number and title of post for further details and application form to: Overseas Educational Appointments Department, The British Council, 88 Davies Street, London W1V 2AA.

THE
TIMES
EDUCATION
SUPPLEMENT

COLLEGE OF EDUCATION, UYO
Cross River State, Nigeria

Applications are invited from suitably qualified candidates for the following posts in the College of Education, Uyo, Cross River State, Nigeria:

Appointment	Subject
Senior Lecturer	English Language
Lecturer 1	English Language
Senior Lecturer	English Literature
Lecturer 1	Vocational Economics
Senior Lecturer	Mathematics
Lecturer 1	Mathematics
Lecturer 1	Mathematics
Senior Lecturer	Statistics
Lecturer 1	Statistics
Lecturer 1	Accounting
Lecturer 1	Accounting
Senior Lecturer	Religious Studies
Lecturer 1	Religious Studies
Senior Lecturer	Computer Science
Lecturer 1	Computer Science

Qualifications: Lecturers are required to meet the needs of expanding academic programmes of the College of Education, Uyo. For academic subjects, a postgraduate degree from a recognised University is required, normally plus a higher degree. Evidence of research and publication are usually required at the Senior Lecturer level. For practical subjects comparable qualifications and experience are required. Appointments may be made at Principal Lecturer level (the level above Senior Lecturer) where suitable candidates are available. At this level, at least 8 years of post-qualification teaching experience is required, plus evidence of research and publication.

Senior Grades:	
Lecturer 2	£4364 p.a. per annum
Lecturer 1	£4140 p.a. per annum
Senior Lecturer	£4980 p.a. per annum

Conditions of Arrangement: Non-Nigerians are appointable only on Contract for two years in the first instance, renewable by mutual consent.

Passages are paid for repatriation, wife and up to four children under the age of 16. Furnished quarters are provided in Uyo, and house rent is paid at a rate of 10% of the basic salary. Free passage is also provided at the end of the contract. Contract is for two years. A service bonus of 50% of the basic salary is payable at the end of the contract.

Further details and application forms should be obtained telephonically, telegraphically or by post from:

Kendall Associates,
The Buildings,
The Street,
WOMERSLEY,
Guldford, Surrey GU8 0PE,
England
Telephone: Guldford (0483 973) 88478.
Telex: KENDALL GULDFORD.
Tele: 21120 Reference 1480.

Completed application forms must be received by 17th July 1981. Interviews will take place during the third week of August 1981.

UNIVERSITY OF NATAL
Department of Education
Durban

Applications are invited from suitably qualified persons, regardless of sex, race, colour, religion or national origin for appointments in the post of:

PROFESSOR AND
HEAD OF
DEPARTMENT

The salary in the range: R20 040-R28 280 per annum.

The commanding salary notch will be dependent on the qualifications and/or experience of the successful applicant. In addition, a service bonus of 50% of one month's salary is payable subject to Treasury regulations.

Application forms, further particulars of the post and information on pension, medical aid, group insurance, staff university, housing loan and subsidy travelling expenses on first appointment should be obtained from the Registrar, University of Natal, King George V Avenue, Durban, 4001, South Africa. With -where applicable, on the 31st July 1981 quoting the reference: Adv. 026/81.

THES12

UNIVERSITY OF CAPE TOWN
LECTURESHIP IN
POLITICAL SCIENCE

Applications are invited for the above post vacant from 1st January 1982.

Appointments, according to qualifications and experience, will be made on the salary scale R10 955 - 676 - R14 270 - 810 - R19 220 per annum. A service bonus of nearly one month's salary is payable annually.

Staff benefits include 75% rebate on tuition fees for dependants at UCT, generous study leave privileges, housing subsidy, subject to certain conditions, pension fund, medical aid and group life insurance schemes.

Applicants should submit a curriculum vitae stating research interests and publications, where available, if appointed, present salary, and the names and addresses of three referees.

Further information may be obtained from the Registrar, University of Cape Town, Rondebosch, 7700, by whom applications must be received not later than 31st July 1981.

The University's policy is not to discriminate in the appointment of staff on the grounds of sex, race or religion. Further information on the implementation of the policy is obtainable from the Registrar.

THES12

Overseas

U.S.A.
BOSTON UNIVERSITY
ASSISTANT PROFESSOR

The Assistant Professor is responsible for research, teaching, and service. The position is available in the Department of Economics, leaving a vacancy in the building of the Department of Economics, Boston University, Boston, Massachusetts 02215. The position is open to candidates with a Ph.D. in Economics and a minimum of five years' postgraduate experience in teaching and research. The position is open to candidates with a Ph.D. in Economics and a minimum of five years' postgraduate experience in teaching and research. The position is open to candidates with a Ph.D. in Economics and a minimum of five years' postgraduate experience in teaching and research.

Trainers: These responsibilities presuppose a high level of academic achievement, deep critical thinking, and a broad range of experience in teaching and research.

Candidates should send their curriculum vitae, a list of references, and a letter of recommendation to the Department of Economics, Boston University, Boston, Massachusetts 02215.

Applications and materials should be submitted to: Professor J. C. McLeod, Department of Economics, Boston University, Boston, Massachusetts 02215. The position is open to candidates with a Ph.D. in Economics and a minimum of five years' postgraduate experience in teaching and research.

CANADA
DALHOUSIE UNIVERSITY
DEPARTMENT OF ECONOMICS

The Department of Economics, Dalhousie University, is seeking applications for a senior teaching position in the area of British history, 1760-1840, beginning 1 July 1981. The successful candidate will be a Ph.D. holder with a minimum of five years' postgraduate experience in teaching and research. The position is open to candidates with a Ph.D. in Economics and a minimum of five years' postgraduate experience in teaching and research.

The appointment will be subject to the usual conditions of employment, which will be for a period of three years. The salary will be in the range of \$25,000 to \$35,000 p.a. per annum.

Applicants must have a Ph.D. and a strong record of achievement in the form of publications and research. The position is open to candidates with a Ph.D. in Economics and a minimum of five years' postgraduate experience in teaching and research.

Applications, including curriculum vitae and three references, should be sent to: Professor J. C. McLeod, Department of Economics, Dalhousie University, Halifax, Nova Scotia B3H 2J9 by 31 October 1981.

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The author is president of the National Union of Students.

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